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Correspondence from particular farmers, giving the results of their experience, is solicited. Letters should be signed with the writer's real name, in full, which will be printed or not as the writer may wish.
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Agricultural.

Soil Deficiencies.

We have heard of the old lady who said she made money keeping boarders because she found out what they didn't like and then gave them enough of it. One cannot make money growing plants in that way. If they are only fed on what they do not like they will not produce enough to pay for their ground rent.

We need to find what the plants like or need for proper growth, then ascertain what is lacking in the soil, and then to study the best and cheapest method of supplying those deficiencies.

We will take it for granted upon the authority of the chemists that the fertilizing elements most needed by all plants are nitrogen, phosphoric acid and potash. It is true that the green plant contains more of carbon and more of water than of either of these three, but these are not classed as fertilizers. However, these are not needed in like quantities by all plants, or are they existing in all soils in quantities to produce a healthy and vigorous growth of our usual cultivated crops. These deficiencies must be learned and supplied.

Nitrogen is often spoken of as the most important of these elements, because the vigorous growth of the plant depends largely upon it, and because it is the most expensive when one has to purchase it; but the others are equally necessary to the perfect development of the crop, and are not to be supplied from as many different sources within our reach, though once furnished they are not as easily lost by leaching or evaporation, or as likely to be taken up in excessive quantities, and thus wasted by the plants.
Nitrogen forms a component part of the excrements of all animals and poultry, varying in amount not only according to the species, but according to the food given. The nitrogenous foods, like oil meal and cottonseed meal, contain more than cornmeal, bran and hay, and as practically an average of four-fifths of the fertilizing elements in the food is voided in the excrements, the farmer who uses these will have a manure heap rich in nitrogen if he handles it so that none is allowed to waste. Another source within the reach of the farmer is the decaying vegetable matter in swamps where vegetation grows, and where leaves accumulate and decay.

But nitrogen also exists in large amounts in the air we breathe, and we have learned that certain plants, like all of the clover family, and the legumes or pod-bearing plants, like beans and peas, lupines and others, have the ability to extract this nitrogen from the air and store it up in the soil, by means of certain little nodules, or bulb-like growths on their roots, and that where these will grow the entire atmosphere can be made to supply nitrogen to the soil, if these crops are grown and plowed under.

It is probable the other plants that we call weeds and some trees have the same property, especially such trees as the locust under which grass always grows very rank.

We have also learned that nitrogen in the soil may be preserved from wasting during the winter by what are called cover crops, as winter-growing grains, and other plants that will not die out, or dying will hold enough of the nitrogen to be returned to the soil when they are plowed under or decay. Rye, rape and flat turnips are perhaps the best plants for this purpose in the Northern States, as the two last do not winter kill until the ground freezes, after which there can be but little waste until it thaws in the spring.

The manufacturers of commercial fertilizers find their supply of nitrogen in the chemicals, nitrates of soda and potash, in sulphate of ammonia, and in the decaying of animal matter; as bone, blood, meat or fish, most of which are cooked and dried to prevent the decay commencing until they reach the moisture of the soil, and finely pulverized so that they may then decay to become available as the plants need them.

The sources of phosphoric acid to the farmer are also his animal manures, in which they exist as a result of the waste of bone and tissue in the living animal, replaced by new, and to some extent, by the decay of vegetable matter; but these are inadequate to the demand, as upon this element depends the growth and plumpness of most of our grains and other seeds, and of such roots as contain considerable amounts of starch or sugar. The manufacturer furnishes them as phosphate of lime in ground bone, phosphoric rock, and a waste from the manufacture of iron ore, which is usually called the Thomas slag. It is customary to treat these substances with sulphuric acid to make this element more readily available as food for the plants, but it is now known

that the decay of rich manure or vegetable matter containing much nitrogen generates another acid, which has the same effect if the material is finely ground, though it acts more slowly. It is also aided by the presence of soluble potash.

The farmer's sources of potash are his manures, the decay of leaves and plants and the ashes from burning wood or plants, and among plants that will contribute most in their decay are the various seaweeds, accessible, of course, only to those near the salt water. The manufacturer depends upon the products of the potash mines, the principal of which are in Stassfurt, Germany, which come to us in various degree of purity, as kainit, kaiserite, muriate and sulphate of potash.

As the duty of the nitrogen seems to be to produce a rank and rapid growth, and is shown by a dark green color in the leaves, and that of the phosphoric acid to develop starch and sugar or what will produce them in the perfect growth, that of the potash is to give stamina or stiffness to them, that they may endure until they have performed the true purpose of every plant, the perpetuation of its species by seeds or offshoots. By watching the growth of plants upon a field one may then obtain a very correct idea of the deficiencies of the soil in which they are growing, to guide him as to what he should apply to it.

Another deficiency often is lime, and though bone, phosphoric rock and wood ashes help to supply this, it may be necessary in some cases to add lime either as a carbonate in slaked lime, or as sulphate in land plaster. This is the case when it contains so much acid as to quickly change the color of litmus paper when placed in the moistened soil.

Soils may also be deficient in vegetable matter, and thus be too compact for the fine roots to penetrate easily, and not sufficiently porous to absorb water enough for the plants. This should be easily noticed when working it, and the remedy is the plowing under of vegetable matter and more thorough pulverizing of the soil.

Breeding and Feeding Hogs.

At a meeting of the Kansas State Board of Agriculture last January, Mr. John Cowie of Iowa was on the programme to tell about "The Hog from Birth to Sale," and we are indebted to the Kansas Farmer for a stenographic report of his address, from which we shall take the privilege of taking a few points for the benefit of our readers, who may not succeed in raising pork to as much profit as do the farmers in Iowa and other corn-growing States, but may like to know how to grow them so as to have healthy, thrifty pigs, that will not result in a loss even when the feeder has to buy the grain to grow and fatten them.

He prefaced his remarks by telling that about forty years ago he took the first \$2.50 he had saved, and went to the only man that he knew of who raised pigs in that county, and bought two pigs at \$1.25 each, on condition of catching them himself. He thought it was more work to do that than it had been to earn the \$2.50, but he got them, and carried them home, five miles, in a bag on his back. When they were supposed to be fat enough to kill he was able to sell them at \$1.75 per hundred pounds, which luckily amounted to more money than he paid for them, though they weighed less than two hundred pounds each. If they had exceeded that weight he would have received \$2 per hundred. They were a good type of the "English bacon" hogs.

When better breeds came round he decided to try the Poland China, and a few years after that he had the pleasure of selling four carloads of hogs, all of his own raising, in Chicago, and taking a check for \$5375 for them, and of knowing commission men who saw them said they were the finest lot of hogs that had ever been put on the scales at the stock yards there. He went home that night, and after the check was cashed and divided with his partner, there was not a mortgage on his house and has not been since.

For twenty years his sales of hogs averaged over \$3000 a year. The hogs paid the bills when children were sent away to school, and furnished money to start his oldest boys in business, and if the wheat crop failed, as it sometimes does in Iowa, the hogs made good the deficiency. Therefore he likes the hog and they are personal friends, for he is in the business to make money, and the hog helps him to do that.

His ideal building, of which he has several, is a building with an alley in the centre and pens six by eight feet at each side, with wind on each pen. The house runs north and south, to get both morning and afternoon sun in all pens. Have a gate to each pen. Such pens are necessary when sows are going to farrow. Have the house clean, and give light beds of clean straw. Everything ready for her before her time and no dead pigs.

He has a good pasture of about forty acres, with hog-tight fence. After being a hog pasture for five years it is fitted to grow corn, and another field should be taken for pasture. In large pastures hogs soon learn to feed without much rooting.

Any of the leading breeds are good enough, but in Iowa they have been breeding too fine, and it is well to have sows somewhat coarse, but use a well-bred male, and even with but a half dozen sows it is better to have two males, that there may be no loss by accident to one.

Have all sows farrow nearly at the same time. This saves trouble in care of them, and gives a uniform lot of pigs. He lost many sows in farrowing at first, but now loses none. Then he fed too much corn; the sows were too fat; now scarcely feeds an ear to brood sows, but feeds to make bone and muscle. He once had fifty sows to farrow in two weeks, and had as fine a lot of pigs as he ever saw. He started to feed them cornmeal, oilmeal by the carload and



AN AMERICAN PEA

bran. He fed three times a day all they would eat, from a desire to have better hogs than his neighbors, and in three weeks, of somewhere between three hundred and five hundred pigs, he had but one pig left. He overfed the sows, caused fever and killed the pigs as surely as if he had hit them in the head with a hammer. That was one of his failures, entirely his own fault, and it set him to thinking. He has not lost a pig within fifteen or twenty years, but he does not feed the sows that way now.

For the first twenty-four hours it is better that she should have nothing but a drink. Do not give cold water in cold weather. Get a little warm water to take the chill off. He had seen sows that promised to be good mothers ruined and the pigs lost by a drink of ice water after farrowing. For the first week a handful of bran may be added to the warm water, after the first day. Clean out the pen and give a good dry bed. If you are not such good friends with her that you can get in the pen and hold the pigs up to her to nurse, you are not good enough for the hog business, and had better be in one of the professions.

Gradually increase the feed so that she will be getting a full ration when the pigs are about a month old, then the pigs will be able to get away with all the milk she will produce. Then have a place where they can crawl through to a trough of their own and teach them to feed there. A shelled corn soup is good for young pigs, and later on ground oats made into a swirl. Always feed it sweet, and if by chance any sours add baking soda to it. If the pigs have the sours it is probably from eating something that did not digest well, and baking soda is one of the best and handiest remedies, as the good woman usually has it in the kitchen.

He told a story of a young man who came home from State University and found his father keeping a lot of pigs that were very hard-looking specimens. They had lacked care and showed it. The young man called upon a neighbor who knew something about hogs, though not an educated man. He had a fine, thrifty looking lot of pigs, and he asked why there was such a difference between them and those his father had.

"What do you put in that swirl?" "A little meal and a little bran and a little shorts," said the old man, as he busily stirred away. "Is that all you use?" he asked. "Well," said he, "I use a little brains in mixing and feeding, but I reckon you folks is rather short on them." It was a cruel answer, but as the old man thought the other family looked down upon him because of his lack of education, perhaps no more severe than might have been expected.

Do not feed pigs more than they will eat, or allow any food to stand until it gets sour, or let the trough get sour. They can be weaned at six weeks old by this plan if managed properly. About that time shut the sows on the feeding floor, and give them all

the oats they will eat, and all the water they will drink. In adjoining pen give the pigs all the shelled corn they will eat, and let them go to the sows as they will. In a week the sows will be dry with no caked udder, and the pigs will have no desire to suckle them, and will not if all are turned out into the same pasture.

He never likes to sell hogs until they weigh four hundred pounds or more. Professors are telling that it takes more corn to make a pound of pork after the hogs weigh three hundred pounds than before, but it does not take as much trouble. He has pigs come in May after he feels sure of good weather. They run in the pasture all summer. They are long, lank, big-boned, big-muscled fellows. In September fattening begins, and in February they weigh four hundred pounds each. A few years ago such hogs were at a discount, and every one was talking about "English bacon" hogs. That did not last long.

He had found nothing to fatten hogs any better than ear corn and water. He used to milk cows to get milk for the hogs, sit up to cook feed for them, and make swirl for them. While he did this he never got a good hog. He would not have any one grind corn or cook food for his hogs if he would do it for nothing. Feeds about sunrise in the morning. Like the hired men they do not like to get up before the sunrise in winter. Give the corn on a clean floor, and the water in the yard, then have the hoghouse clean and well bedded, and when they are through breakfast they are ready to lie down in the straw and put on fat. Open the door, open windows and give good ventilation. About three o'clock water them in the yard, then let them to the feeding floor, and about four or half past they may be let into the hoghouse, where they will sleep and grow fat until morning.

The hog is a cleanly animal, and if watered in the outside yard all the droppings will be left there. The feeding floor is cleaned after each meal. A wooden hoe, made of two by six plank, about three feet long, with an old sawblade at the lower end, will scrape it out very quickly. This feeding floor has no roof, and he prefers it so, even if he does have to shovel snow off it sometimes.

To the corn and water for feeding he adds a few oats and a basket or two of raw potatoes. Young shoats to be fattened need oats and shorts.

After hogs are fattened he would not drive them to market. He lives three miles from a railroad station, and when he had driven them that distance they shrank from five to seven pounds each. When he hauled them they did not shrink more than from one to two pounds. His carts are well bedded. He goes with them from the farm to Chicago, stays by them in the yards, feeds and waters them, and stays by them until they cross the scales. This care is what gives the money in the hog business, and it does not depend upon good luck.

He kept hogs thirty-eight years without having hog cholera. Then he got into politics, and he could not run that and make a success of hog raising, and he had the cholera among his hogs.

Notes from Washington, D. C.

The Government printer has in press a Farmers' Bulletin of the Department of Agriculture, giving the result of some of the most valuable experiments recently made by the various experiment stations throughout the country. It will contain fourteen short articles, any one of which can be read in four or five minutes. The first article calls attention to the harmful impurities in most drinking water, and describes a home-made distiller, costing about \$5, which can be used in conjunction with the kitchen stove, and can furnish several gallons daily of perfectly pure and germ-proof water.

Some experiments are cited indicating that the application of lime to the soils increases the yields. Lime applied so as to slake in the soil produced a slightly better result than when slaked and then harrowed in.

Results are given of some quite extensive experiments in the destruction of weeds by means of chemicals. In one instance is cited an oat field, which containing many weeds was on June 20 sprayed with a solution of ten pounds of bluestone to a vinegar barrel of water. The oats and the weeds were about six inches high. On August first the weeds had completely disappeared. The oats were stalky and well stood. In the adjoining untreated plot of oats the weeds were rampant, and the oats were weak and had failed to stool. The crop of the treated portion was one-third greater than upon the untreated area. Forty gallons of liquid per acre were required for this spraying.

Although maple sugar making is an industry confined to the North, it awakens interest everywhere, for there is nothing to quite take the place of the peculiar and delicate flavor of this candy. The Vermont station calls attention to the fact that the maple sap is chemically identical with that of the sugar cane, and may be obtained equally as pure and white if suitable methods of refining are applied. It is matter other than sap which imparts to the maple sugar its richness and flavor as well as its brown color, which is due to the caramelization of some of the sugar when the sap is being boiled down. It is said that a hundred pounds of ordinary maple sugar contain about seventy-five pounds of sugar, five pounds of other materials and twenty pounds of water.

Another article is entitled "Value of Cotton Seed to the Farmer," which shows that this product has a fertilizing as well as a feeding value, and that the Southern farmer is foolish to ship any cotton seed off his farm.

"Alfalfa Silage" is the title of another short article in which the excellent results are claimed that if alfalfa is cut green and thrown into a tight deep silo in small forks and carefully tramped, and then topped with five or six feet of some heavy, tight-packing material like cut green fodder it will make excellent silage. If the alfalfa is put up in the middle of summer in clear, dry weather, it must be raked and loaded as fast as it is cut, as it will become too dry in even a couple of hours.

Other subjects treated are the best methods of treating sandy soils, fertilizers for market garden crops, forage crops for pigs, how to graze steers, the best type of dairy cow, water in butter, etc.

An experiment has been conducted by the Maine Experiment Station on the possibility of securing breeds of hens which shall excel in egg production. Of the 236 hens employed, thirty-nine laid 160 or more eggs and thirty-five laid less than one hundred eggs in a year. Great variations were observed in the fertility of laying, although all the hens were given the same food and care, and the chickens in each breed tested were selected for their uniformity. It was noticed that the eggs from hens that laid the greatest number were on the average smaller in size than those from hens producing fewer eggs, and the percentage of infertility was also greater in the former case than in the latter.

Farmers who are now preparing for spring planting will be interested in some government experiments in planting potatoes at different depths of from one to eight inches. Level cultivation was adopted, and so but little soil was thrown on the potatoes after they were planted. The best average yields were obtained when the potatoes were planted but one inch deep. Notes were taken on the depths at which tubers were formed, and it was found that most of them were within four inches of the surface of the soil, even where the seed had been planted six, seven and eight inches deep. Where the sets were planted less than four inches deep, nearly all the tubers were found between that and the surface of the soil.

A number of experiments are reported from some of the Canada experiment stations, in which different strengths of sulphate of iron and sulphate of copper were used for the eradication of wild mustard or charlock. This weed has become a pest in Canada. Barley plots were sprayed with five and ten per cent. solutions of iron sulphate or two and five per cent. solutions of copper sulphate, at the rate of fifty gallons per acre. At this time the grain was between fifteen and twenty inches high, and the mustard just coming into flower. The iron-sulphate solutions were without lasting effect upon the mustard. The copper sulphate damaged the barley to some extent, and the stronger solution, it is thought, lessened the yield slightly, but both strengths almost entirely destroyed the mustard plants present.

In order to ascertain the effect of these solutions upon this weed at younger stages of growth, mustard seed was sown on plots

in the farm, and when the plants were from six to nine inches high were sprayed with the five per cent. solution of iron sulphate and the two per cent. solution of copper sulphate. The iron sulphate did not kill all the plants, while the copper sulphate destroyed all within a few days. From the experiments made, the station suggests the following as a most effective remedy:

"A two-per cent. solution of bluestone (sulphate of copper) (that is two pounds in ten gallons of water) is, all things considered, the most effective, safest (as regards the grain crop) and most economical to use. The spraying should be done thoroughly, and for that purpose fifty gallons per acre will be required. If a heavy rain follows the spraying within twenty-four hours the operation will have to be repeated. In order that the work may be effective, spraying should not be delayed after the mustard plants have reached a height of six to nine inches. If allowed to grow taller than this, stronger solutions would be necessary and in larger quantities, as the grain would then largely protect the mustard."

Grass Culture.

Land should be taken up every five or six years and given an intense cultivation. Sun light and air will renew the soil, and you get much better results from your fertilizer, for the reason that the land becomes partially dormant without cultivation. It requires a much larger amount of fertilizer and you get smaller results.

It takes about forty days to produce a crop of grass, at an average growth of an inch or more a day. Under proper conditions it will grow ten inches or more in a week, yielding 300 pounds of hay per day to the acre. One may often find spots that fail to get their share of the fertilizer; such spots will be off color and look puny. Give them their full share, and in ten days they will often be ahead.

Many suppose that a drought will kill out much of the grass stand. I have never had any trouble from that source since I commenced to intensify cultivate and feed, certainly none since I commenced the use of bone, potash and nitrate of soda with each crop. Remember that I use fertilizer with every crop, whether first or second, and have come to the conclusion that when the land is well cared for timothy and redtop will go through a severe drought without injury. With intense cultivation and perfect surface connection with the subsoil, enough water will be drawn up to keep the grass roots alive.

With intense cultivation, six inches of water is ample to carry the first crop through. This year mine had but three and made thirty-five tons of hay on seven acres. Eight inches more of water will carry the second crop. It will take double that to make a medium crop on oil fields. With a dry July and August, there is no use to try for a second crop.

Had we better fertilize old grass fields? Should say no. You cannot get half as good results that way, and not half the benefit of the fertilizer. For that reason I should advise taking up all old fields just as soon as convenient, and intensify cultivate them, as hereinbefore described, and get them down to new grass. That is the only way to get good results. The old fields are generally in a very foul condition, and strong commercial fertilizers will be largely thrown away, if thus used.

Never hitch a horse or any other animal on your grass field, or let them stand and stamp or tear up the grass, or let them run or walk over it, except what is absolutely necessary to remove the crop. Remove all animal droppings or heaps of hay or other rubbish from the field. Never drive on your field when the ground is soft and wet, as it often is in the fall, winter and spring.

Never pasture your field under any circumstances. Avoid anything that will tend to pack your soil. Catch, kill or otherwise remove all moles, woodchucks, skunks, or other animals that will trample down or injure the stand of grass. All kinds of poultry bite, scratch and do many things that are bad for the field. The grass field should have the same care that you give your garden or onion patch.

One thing is certain. While the average farmer may not be able to carry out my full scheme, yet he can give his land more careful tillage, use suitable seed, fertilize every crop, and give the grass field the first chance. If he will do this thoroughly he will most surely double his product, and educate himself into more thorough work.

GEORGE M. CLARK.

Union Dairy Institute.

The State Board of Agriculture, the Hampshire Agricultural Society and the Massachusetts Agricultural College unite in inviting the public to attend an institute for consideration of subjects connected with milk and butter production and marketing, on March 20, in the chapel at Amherst. The principal speakers will be George H. Ellis of Newton, subject, "The Production and Handling of Milk and Cream for the Private Trade," and Prof. J. L. Hills of Burlington, Vt., subject "What Makes the Milk Test Vary So?"

Butter exhibit and award of prizes to successful students by the president of the Massachusetts Society for Promoting Agriculture. Opportunity for questions: To be answered by the Judge, Orin Douglas of Boston and A. S. Barnes, expert instructor in butter making. Professor Brooks and Professor Cooley will be present to answer questions pertaining to their respective lines of work, and the former will be especially pleased to answer inquiries concerning the use of fertilizers. Farmers are invited to bring in samples of milk and cream for testing. The exercises continue all day, beginning at 9.30 A. M. Coffee and cold lunch will be served free at noon.

Agricultural.

Feeding Pigs and Grazing Steers.

A farmers' bulletin of the Department of Agriculture now in press gives the results of some interesting experiments in pig feeding. At the Oklahoma Station, alfalfa pasture, with and without the addition of grain, was studied with a number of pigs. Other forage crops were also tested, including sugar beets, cow peas, sorghum, sweet potatoes and peanuts. During part of the test the feeding stuffs were cut and fed; during the remainder of the time they were harvested by the pigs.

These tests led to the following general conclusions:

Alfalfa is excellent as pasture for hogs. Pigs will make some gain with no other food; excellent gains when fed grain while on alfalfa. Continuous pasturing will injure and may destroy the alfalfa. With rare exceptions, alfalfa should not be pastured the year it is sown. Sorghum also makes a fair pasture for hogs. Sowing cow peas, planting peanuts or sweet potatoes, and allowing hogs to harvest the crop, giving them some grain in addition, reduces the cost of pork production. Sugar beets are much relished by any class of stock. The greater cost of growing them, as compared with other crops, makes it doubtful if they are an economical crop when used in large quantities.

Experiments are also noted by the department concerning the grazing of steers on corn and cowpeas.

"It is evident that allowing cattle to gather a crop instead of harvesting and feeding it must be a saving of expense," said Mr. C. F. Langworthy of the office of experiment stations. "If at the same time the gains made are satisfactory, this method of feeding should commend itself."

"One of the Experiment Stations recently tested the desirability of grazing steers on a field of corn and cowpeas, supplementing this food with as much cotton seed as the animals required. The five steers used in the test were turned on a five-acre field after the corn had been pulled. The yield of corn was twenty-five bushels to the acre, which is regarded as hardly an average crop. The cowpeas gave more than average growth of vines, but less than an average crop of peas. None of these had been picked."

"The steers required sixty-five days to consume all the food on the five acres. They were allowed access to only one-third of the field at a time. The cotton seed was always accessible, and was consumed ad libitum. During the first thirty days of the test, while the pea vines were yet green and peas were accessible, the steers ate very little cotton seed."

"At the beginning of the test, the five steers weighed 3888 pounds. The average daily gain was two pounds per steer. The average amount of cotton seed consumed per steer during the whole test was 250 pounds. Rating cotton seed at \$6 per ton, and making suitable allowance for the cowpeas planted, the cultivation of the crop and the labor of feeding the steers, the cost of a pound of gain was calculated to be 1.6 cents."

"In estimating the cost of grazing, the cotton seed and cowpea are charged to the feeding, but it is reasonable to suppose that they will, as manure scattered over the soil, increase the yield of the succeeding crop more than their cost. The advantages of feeding cotton seed to the steers instead of corn are cheapness of food and value as a fertilizer. It was estimated that the steers grazed the three lots of the field about as follows: On the first plot, one-third of the field, all the pea vines, husks, fodder, and about one-fourth of the stalks were eaten; on the second and third plots, each one-third of the field, root having fallen Oct. 22, the steers ate about two-thirds of the pea vines, all the husks and fodder, but scarcely any of the stalks. The results of the grazing of this field indicate that the corn should be gathered and the animals turned to grazing as early as possible before frost."

"Judging by these results this method of feeding is profitable and worthy of further trial."

Proper Temperature for Food Products.

The storage of fruit and vegetables to protect them from injurious temperatures must vary with the locality, the amount and the means of controlling the temperature. For family use, the house cellar is the most usual place of storage, because of its convenience and its nearly uniform temperature, if well built.

For berries and the more perishable fruits, as peaches, plums, grapes, etc., a system of cold storage on the farm would help to carry them over a glut in the market, or from a season of low prices to higher, but not many farms are so provided, and the larger mechanically-cooled storage plants in the cities are dependent upon. From the growers and dealers in food products we have obtained information as to the proper handling and temperature of each as far as we can.

Apples for cold storage should be carefully gathered and handled, so as to avoid any bruising, as this is the most frequent cause of early decay. Only good-sized, sound fruit should be selected for cold storage, as the expense of storing inferior fruit will not be repaid by its sales when taken out. If practicable, when there are storage facilities on the farm, it would be well to put the apples loosely in barrels without heads and stored so that there is a free circulation of air. They will then go through the sweating process without scalding. To leave them in piles in the orchard after gathering is objectionable.

Bins built in a barn by nailing boards on the studding as a lining for the outer wall, and filling the space between boards and lining with straw, then covering bottom and sides of the bin with straw, furnishes safe storage until the temperature goes below zero. Many are also stored in pits as by the method given hereafter for potatoes.

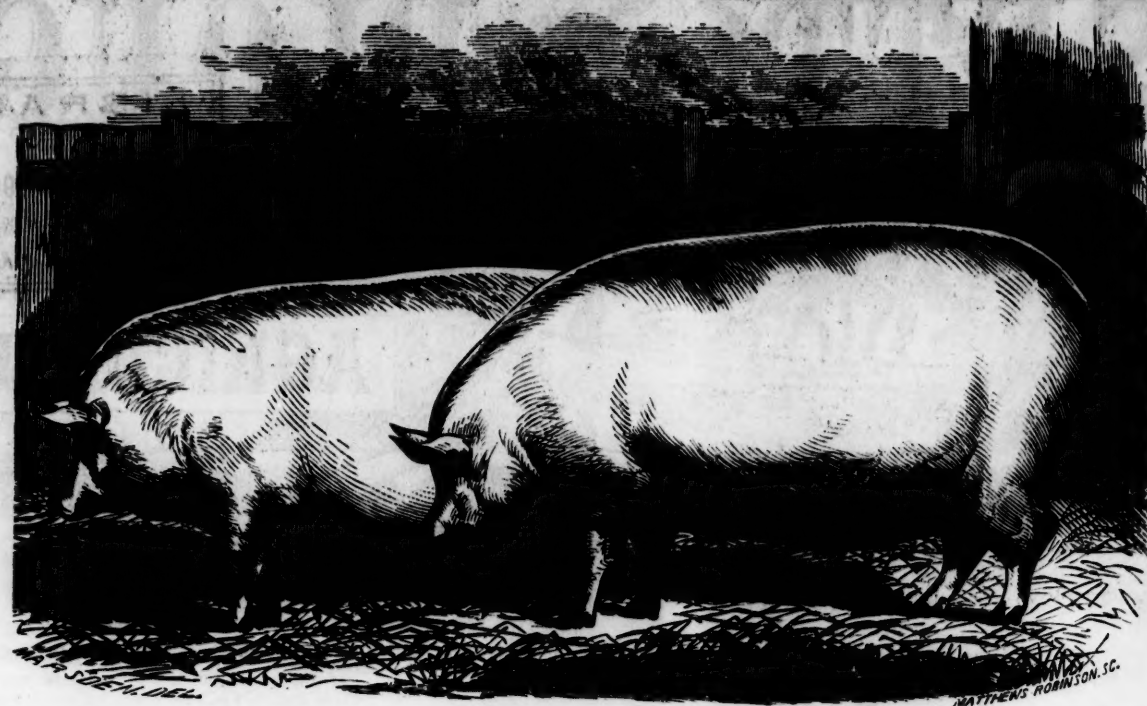
Where there are large quantities it is better to have specially constructed storehouses for them, and directions for such buildings, with double walls and floors, and the space between them filled with non-conducting material was given in Farmer's Bulletin No. 119. On a farm near Philadelphia, a mow twenty-five by forty feet was converted into two rooms for fruit storage at small expense, by lining the outer walls, which were of stone, with paper and doubling the inside walls with felt between inner

Cows Made To Breed

By injecting with Hood Farm Breeding Powder. Over 75 per cent. of cows treated with it for failure to breed have since bred.

After Abortion all cows should be treated. It thoroughly disinfects, kills germs and puts organs in normal condition. \$1 and \$2.50. Dollar size, mail \$1.15, large, four times more, express, \$2.75.

Hood Farm Milk Fever Cure saves 90 per cent. of cows attacked by this disease. \$2.50. By express, \$2.75. Extra good Jersey bull calves and Berkshire sows generally for sale. Correspondence solicited. Mention this paper. Address C. I. HOOD & CO., Lowell, Mass.



CHESTER WHITE HOGS.

and outer boards. There are double doors to each room, and they are left open nights to admit cold air and closed days. This reduces the temperature to about 50°, and when the outside temperature goes below that they can be kept closed, and it should not get below 35° inside during the winter.

Another especially built to hold five hundred barrels, if stored three tiers high, is twenty by twenty-four feet on the ground. The space under the floor is filled with coal ashes to keep out rats and other vermin, and the wall is banked up outside. There are two rows of three-inch studding, boarded outside and inside, and celled under the roof. Cold-storage paper is put between the studding and boards on each side, and also between the studding, so that there are two enclosed spaces of dead air between the walls. Coal ashes are between the roof and ceiling. There are two windows with double shutters, and a doorway with single outer door, and double inner door wide enough for two men to pass through with a barrel between them, the double door being closed only in very cold weather. But the most peculiar feature is a six-inch pipe opening through floor, and carried two feet underground, one hundred feet to the northwest, then ten feet upright, with a four-foot horizontal funnel opening to the northwest. There is also a ventilator through roof and ceiling. The air coming through this pipe is warmed in winter and cooled in summer, thus giving a nearly even temperature. [We would suggest that this might do in Pennsylvania, but there are points farther north where the air would not be warmed much in winter unless the pipe was five or six feet underground, or so deep that the earth would not freeze around it.—Ed.]

Potatoes and root crops are often stored in underground pits, with earth and straw around them to protect them from frost, or in outside cellars in the side of a hill, or below the level of the surface, floored and walled with stone laid in cement. This is a modification of the house cellar, and the important point is to keep a uniform temperature above the freezing point, or from 34° to 38°. There is more danger in the house cellar of too high a temperature and a lack of sufficient moisture. In the house cellar bins of three or four feet deep, with board bottoms and sides, are preferable, and if the cellar is too dry they may be packed in sand and covered with it, and the sand kept moist by sprinkling. An air pipe, extending under the earth, like that spoken of above in the apple storage, would make a valuable aid in keeping the cellar at a uniform temperature.

In very cold regions they have especially built cellars, with thick floors and walls of masonry and cement, that are expected to have an inside temperature above freezing, when outside it is 40° to 50° below zero. Cheaper cellars are built with plank walls covered with earth, and may be warmed with lighted lanterns placed in them, if the cold promises to be too severe. Such cellars may be made under a barn or other outbuilding.

Pit storage can serve a good purpose if the ground is dry and protected from north or northwest winds, as high winds from those points during freezing weather are apt to drive the cold in. It is better not to have the bottom of the pit much below the surface, as it always should have drainage. For twenty-five to fifty bushels a round pit should be used, and for larger amounts a long pit in which the pile shall not be over five to six feet wide and three to three and one half feet deep at the center. A layer of straw six inches deep under the roots and the same over them, with eight to ten inches of soil on that, will be sufficient until the ground freezes an inch or two deep, when six inches more of earth may be added. This will do in the latitude of Boston, but farther north another layer of straw or coarse manure may be needed after weather becomes very cold, but it should not be such as to rot there, and should be removed as soon as warm weather returns. Until it is cold enough to need this there should be apertures, perhaps with straw laid straight in them, to allow some ventilation. It is claimed that potatoes dug late in the season and stored in pits are better for use in the spring than those kept by any other method, and it is well to plant and grow them late if they are to be kept for late spring trade.

Sweet potatoes should be dug before frost comes, put in piles under cover to sweat out and dry until cold weather, then pack in boxes or barrels with layers of paper between layers of potatoes, and stored at once in dry cellar or room where temperature will not go below 40°, or they may be packed in dry sand. Carrots do best on slat platforms, piled not more than two feet deep and covered with sand, while beets, turnips, parsnips and salsify in cellars may be put in deeper layers if covered with sand to prevent shriveling, or they may be kept in pits the same way as potatoes.

Cabbages need a constant temperature near the freezing point. They can be stored in special cellars about two-thirds under ground, or in trenches covered with straw and soil. In a trench eight to ten inches deep and three feet wide with the roots downward they may be set as close as possible and then covered. Those not fully headed will often make more growth in this way if the roots are bedded in the earth. [We have also seen them well kept by putting a layer of rags down, then piling the heads upside down on that three or four feet deep, and covering with straw and earth.—Ed.]

Onions need a dark, dry cellar with a temperature below 40°, and placed eight to ten inches deep on slat platforms. As warm

weather comes, air the cellar by night and close it by day, trying not to have it go below 34°. They also keep well if frozen solidly and then covered with straw or waste hay, and not handled until they have thawed under the covering.

Squashes are quickly injured by frost and should be gathered early and housed or covered at night. In cellars they need as high temperature as can be obtained without artificial heat, and good ventilation, closing the cellar in very cold, damp or rainy days. For large quantities special buildings are built that can be kept at about 40°, well ventilated, and the squash on shelves about two feet apart.

Where fruits, vegetables, etc., are kept in cold storage, the following temperatures are considered most favorable, viz.: For apples, apricots, berries, buckwheat flour, oatmeal, corn meal, cider, cheese, cranberries, onions, potatoes, cabbages, dried or salted fish, furs and woolens, 32° to 36°; for sauerkraut, brined meats, lard, maple syrup, dried fruits, nuts, dried corn, peas, beans, etc., 35° to 40°; eggs, 30° to 34°; cheese, 31° to 38°; butter, 12° to 15°; lemons and oranges, 34° to 36°; beer, 35°.

Tropical fruits should be kept in rooms at a temperature of 60° to 70°, and while oranges will endure 26° on the trees for an hour or so, they will freeze if exposed to it four hours. Freezing and thawing gives them a sickish, sweet flavor, but if put at once in cold water they can be thawed without injury. Lemons taken from cold storage should not be taken to a warm room, as they lose quality quickly.

Honey should be stored in a dry room and kept at a temperature of 70° to 90°. It is a mistake to store honey in a refrigerator or in a cool, damp place.

Hops should be kept as dry as possible, and in a temperature of about 40°. The higher the temperature above this and the more moisture the more rapid the deterioration.

The best conditions for the preservation of cut roses, smilax, asparagus and ferns is a moist temperature of 42° to 50°; for carnations, violets, sweet peas, lilies, and lily of the valley, a dry temperature of 50° to 60°.

Fruit wrapped in heavy brown paper will stand 15° more cold than if not wrapped. Eastern grapes bear low temperatures better than California or Malaga.

Young fruit trees, flowering shrubs and plants are injured by temperatures below 20°. They are stored in cellars packed in straw, and generally shipped in the same manner as potatoes as regards packing.

Celery is stored in an unheated, enclosed, well-ventilated shed, the earth is well wetted and the celery packed in an upright position, with narrow lanes, about two feet apart, for ventilation. The temperatures should be kept as near 32° as possible; a temperature of 35° to 36° injures it.

Canned tomatoes when frozen become stringy, canned fish soft and mushy, lemons black and spotted, olives soft and rancid, pickles soft and unsalable.

Sauerkraut ferments at 90° and freezes at 15°, either of which conditions spoils it. All tree seeds, including peach, plum, walnut, etc., sprout better in the spring if frozen during the winter. Bulbs, including tulips, lilies and hyacinths, are not injured if subjected to a temperature below zero.

Oysters in shell can be kept for two months in a dark place when the temperature is but little above freezing. If occasionally sprinkled with ice water. Fresh oysters in cans deteriorate after two weeks in any temperature unless frozen.

Fresh fish are stored and shipped in bins with cracked ice, the ice water running over them to keep them moist. Northern merchants sometimes freeze fish for storage and transportation, but they spoil more quickly after being thawed, and it is claimed that the flavor is injured by freezing. Oysters, if likely to be exposed to very low temperatures, should not be washed. Animals should not be killed while they are overheated or excited, but should be kept quiet for twenty-four hours previous, and fed lightly on cooling food. If cold storage rooms are not available kill only on a cool, dry day when temperature is not above 45° to 50° or below 20°. In wet weather only when temperature is not above 35° to 40°. After killing let carcasses hang for two hours, until they have a temperature of 40° or lower. They may then be kept for several days or shipped at 45° in dry weather, or at 40° or lower in wet weather. Pork that is to be cured should never be frozen, and it is said that frozen meat will spoil in sixteen hours at a temperature of 75°.

Beef should not be placed in cold storage until all animal heat has left it, but be gradually cooled outside to 50°, then in storage reduced to 36° in forty-eight hours, then gradually warmed to 38°.

Dry salt pork for Southern use needs to be cured in salt thirty days for winter and fifty to sixty days for summer use.

The warnings of the weather bureau have

Hit the Nail On the Head.

If you have eruptions, pains in the head or kidneys, stomach trouble and feelings of weariness, "Hit the nail on the head." Hood's Sarsaparilla is the hammer to use. It will purify your blood. The masses praise it for doing this and making the whole body healthy.

Hood's Sarsaparilla Never Disappoints

helped farmers in deciding when to kill the meat salted for home use.

Boston Fish Markets.

The receipts on the market this week have been fairly good, with a quick demand and little change in prices. Market cod is bringing 34 to 4 cents, with large at 4 to 4 1/2 cents, and steak at 6 to 6 1/2 cents. Haddock is steady at 3 to 3 1/2 cents, with lake easier at 1 1/2 cents for large and 3 cents for small. Pollock is bringing 4 1/2 cents and cusk 3 cents. Bass is in fair supply at 18 cents for striped, 8 cents for sea and 7 cents for black. Halibut is easier at 8 cents for white and 7 cents for gray, with bluefish steady at 10 cents. Spanish mackerel 12 cents, sheepshead 15 cents, pompano 12 cents and red snappers 8 cents. Lake trout 12 cents, sea trout 7 cents and whitefish 6 1/2 cents. Perch are steady at 15 cents for sea, 6 cents for white, and 6 cents for yellow. Shad are now within price at 30 cents for jacks and 50 cents for roes. Pickerel 12 cents, native smelts 12 cents, and Eastern 5 cents. Eels steady at 10 cents. Fresh tongues 10 cents, cheeks 8 cents, and Western salmon 8 cents. Oysters are steady at \$1 for Norfolks, \$1.15 for fresh-opened Stamford, \$1.25 for selected Norfolks and Providence Rivers. In the shell Blue Points \$2.50 a bushel. Clams steady at 50 cents a gallon, or \$2.50 a barrel. Scallops \$1 a gallon and shrimps 80 cents a gallon. Lobsters are bringing 18 cents alive and 20 cents boiled.

Butter Market.

There are some who claim to be getting last week's prices for certain marks of butter, but the general feeling is that there has been a decline of a half cent a pound on best grades, and that not many assorted sizes Vermont and New Hampshire extra creamery bring over 23 cents, and northern New York 23 to 24 cents, while large tubs are not over 23 cents. There are some fancy makes Western held at 24 cents in assorted spruce tubs, but they are few, and 22 to 23 cents is fair price for assorted spruce and 22 to 23 cents for large ash. Eastern from 20 to 22 cents. Northern firsts at 22 cents and Western at 21 cents, with seconds at 19 to 20 cents. Some sales from cold storage at 19 to 20 cents for June creamery. There seems to be fair demand for renovated at 17 to 18 cents for choice. Lower grades are offered at 12 to 15 cents. Imitations are dull at 13 1/2 to 15 cents, and so are ladies at 12 to 14 cents. Dairy butter selling slowly at 20 to 21 cents for Vermont extra and 19 to 20 cents for New York. Firsts are 18 to 19 cents, seconds 16 to 17 cents and low grades 12 to 15 cents. Boxes in full supply, and dairy lots dull. Prints quiet. Extra Northern creamery 24 cents and Western 23 cents, dairy 20 cents in boxes, 22 cents in prints, common to good 15 to 19 cents for boxes and 16 to 20 cents for prints. Jobbers want about 25 cents for best creamery in tubs, 26 cents in boxes and 27 cents in prints, but might shade it a little to some customers.

The receipts of butter at Boston for the week were 17,163 tubs and 22,681 boxes, a total weight of 515,083 pounds, including 54,782 pounds in transit for export, and with the latter deducted the net total is 758,321 pounds, against 818,737 pounds the previous week and 633,441 pounds the corresponding week last year. This shows that receipts fell off a little from the week previous, but are ahead of last year.

The exports of butter from Boston for the week were 94,970 pounds, against none for the corresponding week last year. From New York the exports amounted to 4878 tubs, and from Montreal, by the way of Portland, 724 packages.

The Quincy Market Cold Storage Company reports the movements of butter for the week as follows: Taken in 400 tubs, out 2279 tubs, stock 21,174 tubs, against 7030 tubs same time last year. The Eastern Company reports a stock of 3683 tubs, against 637 tubs last year, and with these added the total stock is 24,867 tubs, as compared with 7687 tubs a year ago.

Export Apple Trade.

The total apple shipments to European ports for the week ending March 9, 1901, were 18,099 barrels, including 17,309 barrels to Liverpool, 650 barrels to London, and 50 barrels various. The exports included 6257 barrels from Boston, 1327 barrels from New York, 8416 barrels from Portland, 1831 barrels from Halifax and 178 barrels from St. John. For the same week last year the apple shipments were 21,214 barrels. The total apple shipments since the opening of the season have been 1,296,216 barrels; same time last year, 1,205,274 barrels. In detail the shipments have been 401,306 barrels from Boston, 230,638 barrels from New York, 204,380 barrels from Portland, 246,955 barrels from Montreal, 181,911 barrels from Halifax, 29,801 barrels from Annapolis and 6245 barrels from St. John, N. B.

Letter to Chester R. Lawrence, Fannell Hall Market, from Liverpool, March 2, reports market in excellent shape for both Canadian and States apples, as light supplies have caused advance in prices. Canadian Spys are now coming and bring good prices. Baldwins in small supply, but Russets more plentiful, and showing better samples than they have been. Maine stock selling well, and full value obtained for Nova Scotia, only ordinary in quality. California Newtoms in demand, and prices steady for those in good condition. Receipts from Aug. 12 to Feb. 23, at Liverpool, 708,120 barrels, 63,450 boxes. To same date last year 585,141 barrels. Prices at last sale, Maine Baldwin \$3.84 to \$5.04 for No. 1 tight packed, No. 2 and slack packed \$2.88 to \$4.14, Ben Davis No. 1 \$4.06 to \$5.16,

FAKE TESTS and TESTIMONIALS ABOUT CREAM SEPARATORS

There are always new people to be gulled with an old fake. Hence a word of caution is pertinent regarding the reputed separator "test" and "testimonial" advertisements now being published in some of the papers and put out in circulars.

As regularly as the malarial and sarsaparilla season comes round the would-be competitors of the De Laval machines like to flatter themselves by seeming to stand up alongside the De Laval machines and publish reports of their imaginary nearness in efficiency,—according to means and measurements of their own creation and without much regard for truth and honesty.

Many of those so called "tests" are simply manufactured out of the whole cloth,—it being impossible to locate the places where made or the persons by whom made. Others of them are made by agents or employees or by intending buyers who are offered a big discount and an agency provided they will "try" a De Laval machine in apparent test, the conditions of which "test" are to be fixed by the concern in question and the "results" then certified to by the purchaser. Sometimes innocent parties are called in as "judges," to certify to skim milk "tests," when they know no more of the manipulative use of a Babcock Tester than they do of a flying machine. Occasionally tests may be honest in a way, but so conducted as to be altogether impractical and misleading in result shown.

All this applies equally to testimonials, though some of these are given in good faith—just as is the case with "dilution" separators and every other fake and nostrum ever perpetrated.

There isn't a man living sufficiently familiar with cream separators to pass competent judgment upon them who does not know that the patent protected "Alpha" disc system employed in the De Laval machines renders them unapproachable by anything else yet devised,—a fact to which thousands upon thousands of De Laval users may bear witness with their experience.

THE DE LAVAL SEPARATOR COMPANY,

New England Agents:
Moseley & Stoddard Mfg. Co.
RUTLAND, VT.

General Offices:
74 Cortlandt Street,
NEW YORK.

No. 2 \$3.48 to \$4.32, Russets No. 1 \$3.00 to \$4.26, No. 2 \$3.12 to \$3.72, Nova Scotia Baldwin No. 1 \$3.06 to \$3.54, No. 2 \$2.16 to \$3.30, Canadian Baldwins No. 1 \$4.32 to \$5.40, No. 2 \$3.60 to \$4.44, Spys No. 1 \$4.38 to \$6.36, No. 2 \$3.84 to \$4.80, Russets No. 1 \$4.02 to \$4.32, No. 2 \$3.30 to \$4.32, Canada Red and Ben Davis No. 1 \$3.94 to \$5.76, No. 2 \$3.36 to \$5.04, California Pippins in boxes, 4 tiers, \$1.92 to \$2.16, 5 tiers \$1.68 to \$1.74. Cable despatch of March 12 says: "Steamer New England selling, demand very active, prices unchanged. Fancy Baldwins \$4.32 to \$5.40, No. 2 Baldwins \$3.12 to \$3.34, Ben Davis \$4.36 to \$5.28."

Notes from Washington, D. C.

The study of legumes is one of the most interesting possible. Legumes can well be said to be a mainstay of agriculture, for they alone are capable of converting the unlimited free nitrogen in the air into plant food. It was first discovered that clovers, cowpeas, vetches, etc., were unusually rich in nitrogen, and then that they enriched the soil upon which they grew. This was explained by the discovery that they in some way drew this nitrogen from the atmosphere, four-fifths of which is composed of this element. The next step was the discovery that the plants absorbed the nitrogen only when their roots were provided with tubercles containing bacteria.

Investigations which are now being conducted show that each particular plant has its bacteria, and that bacteria growing upon the roots of one legume, as clover, may not grow upon the roots of another genus, as the cowpea. Therefore, where the nodules are not formed, as is very probable with leguminous plants new to the sections where planted, it is advisable to secure them, and also sow their proper inoculating bacteria. The absence of root tubercles will probably account for the reported failure of leguminous crops in many sections.

In case of the absence of these nodules it becomes necessary to inoculate the soil with the desired bacteria.

"This is all very simple and practical," said Dr. F. W. True, the director of the office of experiment stations. "In some Alabama experiments with hairy vetch grown on soil for the first time, one lot of seed was sown in a water solution of earth from an old garden spot where vetch had grown, and another was sown without treatment. The inoculated plants had large clusters of tubercles on the roots, and produced 2540 pounds of cured hay per acre. The uninoculated plants had no tubercles on the roots, and produced 232 pounds per acre. The soil of the inoculated plot, besides producing the larger crop, was left in much better mechanical condition. Not only was the total amount of forage increased in the above instance, but there was a larger percentage of nitrogen in the inoculated plants. The total amount of nitrogen contained per acre in the crops was as follows: Inoculated, 105.5; not inoculated, seven pounds.

"The soy bean has been grown at the Kansas Station since 1880. Only recently, however, have tubercles formed upon the roots, and this was brought about by artificial means. Inoculated soil from a soy bean field was obtained from the Massachusetts

Station, and by scattering it over the Kansas land plants with tubercles were grown, producing an increased yield and a higher percentage of nitrogen."

"It will not do to suppose, doctor, that soil which contains the bacteria from one plant will produce nodules on all legumes, then?"

"In using inoculated soil it should be borne in mind that while experiments have shown that the germs from one plant will inoculate very closely related plants, and even in some cases those distantly related, the best results will probably be obtained by using germs from the same species of plant as that which it is proposed to inoculate."

"It is important to remember also that soil inoculation for leguminous plants is most valuable for poor soils deficient in nitrogen, and is not likely to prove profitable on soils abundantly supplied with available nitrogen."

There are a number of methods of inoculating soil with these germs. On this subject the Mississippi Experiment Station gives explicit directions. It says:

"One method is to find a field on which a crop of vetch, peas or clover has grown, on the root of which an abundance of nodules was developed. In such a case one may be sure that the soil of the old vetch or clover field is full of germs that escaped from the nodules when they decayed. Then draw dirt from this field, about one ton to the acre, and scatter as evenly as possible over the one to be inoculated. It should then be quickly harrowed in, especially if it is a hot, clear day, because sunshine kills the germs. The dirt should be taken preferably from two to three inches below the surface. A second method is to obtain some earth from an old inoculated vetch or clover field, put it in a vessel and pour water on it. Then stir thoroughly, allow it to settle, and use this water to thoroughly wet the seeds to be sown. The water thus obtained is full of germs from the soil, which will stick to the seeds as they dry. Here, again, we should use care and not dry the seeds in the sunlight. This seems to be the most economical way of inoculating a field. It is not a difficult matter to spread out a bushel of clover or vetch seed on an old cloth or tight floor, and sprinkle with plenty of the muddy germ water. The seeds may be left right there until they dry, if they are in the shade, and then are ready to sow. A third method is to buy a material known as nitrogen. This is simply a gelatinous substance full of the germs one wishes to use. It is made in Germany, and consequently in the trip across the ocean and then to us it is very liable to ferment and spoil."

The irrigation works of India are the vastest in the world, watering over twenty million acres of highly productive land. The works are all government properties, under an inspector-general of irrigation. The Indian irrigation constructions are generally of the most substantial and indestructible character of solid masonry and great strength.

Exports to Cuba have increased from \$13,300,000 in 1880 to \$26,000,000 in 1900. To the Philippines the increase has been from \$133,000 in 1880 to \$3,500,000 in 1900.

Poultry.

Practical Poultry Points.

Several of our exchanges publish a paragraph stating that there is no such disease on poultry as "black comb." That is an incorrect and truthful as to say that there is no such disease as "sore finger." The soreness, like the black comb, is merely an indication of some cause. Possibly the blood does not go to the head and stagnate there until blood vessels are congested without some cause for such action. But when the comb turns black cut it with a knife or scissors until blood starts. If the blood will not start from the comb, try cutting the head off and see if that will start it. It may do what other doctors have done, conquer the disease by killing the patient.

The German government has sent an agent to the United States, Count von Luckler, to purchase American poultry to take to that country, as they believe better specimens of several desirable breeds could be found here than in any part of Europe. He visited yard of several New England breeders, and at least one leading breeder in Ohio, and is said to have gone back last month with a considerable number of the purely American breeds.

While they avow the intention of trying a cross with them on the German poultry, they will probably also keep some of them pure-bred. But what crowing we expect to hear from the yards from which his selections were made.

Mixing old and young poultry or heavy and light in the same package is a practice which almost invariably results in lower prices to the shipper. That is, mixed lots do not sell at as high a price as can be obtained for either class alone; or, if one is heavier than the other, the mixed lot will sell at the price of the cheapest. This is more true of turkeys than of other fowl, and to send one or two old toms or hens in the same lot with young birds is likely to result in the whole being sold for less than the small birds would bring if sent alone. Small chickens of two pounds each can often be sold as broilers at a better price if shipped separately, and so can the roasting chickens of five pounds weight or more, than when they are shipped in the same class, or especially when the medium weights are mixed with them.

We would never allow chickens to run at large without the hen until they are large enough for her to leave them. The wire cage about four feet high with sides of eighteen-inch wire, one-inch mesh, protects them from cats, hawks and other pests by which many are lost. Then a close box into which rats cannot get at night, and we have not lost a chicken from these causes for years, and few from disease if the box and cage were moved to clean ground every day. We feed five or six eggs a day from the day old, then less frequently, and never more than they will eat clean. Plenty of pure water always where they can get it and good clean grit. Take care not to over crowd the coops or brooders, and not let large and small remain together, as the smaller ones suffer by being crowded, and often by not getting their share of the food. Keep all raw meat that is not perfectly sweet and fresh away from chickens, and indeed from old hens also. The hens will stand it as a food better than the chickens, but it is liable to taint the eggs, giving a stale flavor. The ground beef scraps have been thoroughly cooked to get the grease from them, and should be free from odor, and much better as well as cheaper than raw meat. A pound of them, costing two cents when bought in one hundred-pound bags, has more nutrition than four pounds of raw meat of any kind, and being hard and dry is more thoroughly ground in the gizzard, therefore better digested.

The Practical Farmer tells of a Mr. Cox at Sabbath Rest, Pa., who started about ten years ago with a flock of pure-bred Barred Plymouth Rocks. He found them better layers and better table birds, either as chickens or fowl, than the common mongrel lot he had before, but a record of eggs for the year showed an average of ninety-six eggs per hen. He found that about one-fourth of the hens lay one-half the eggs, and he selected the best layers to breed from. Usually these were the ones that began to lay earliest the year before, and that made the quickest recovery from their moult; thus he was breeding from birds a year old that might be said to have made a reputation if not a record. Occasionally one of these would go wrong, and she was put out to fatten. In six years, or in 1896, he had an average of 174 eggs from ninety hens, in 1897 an average of 179 eggs from one hundred, and in 1898 he reached 194.3 eggs per hen. The record by months, commencing Dec. 1, 1897, was 140 eggs, 2600 eggs; January, 1898, 128 eggs, 2824 eggs; February, 121 eggs, 2735 eggs; March, 102 eggs, 1918 eggs; April, ninety-six eggs, 1726 eggs; May, ninety eggs, 1700 eggs; June, eighty-three eggs, 1365 eggs; July, seventy-two eggs, 1008 eggs; August, fifty-eight eggs, 700 eggs; September, forty-six eggs, 494 eggs; October, forty eggs, 373 eggs; November, thirty-four eggs, 343 eggs.

Take notice of the large number of eggs during the winter months when prices were double the summer prices. The best record is in the twenty-eight days of February, an average of over 22 eggs per hen. The decrease in number of hens as spring advanced was mostly due to broody hens, but he made many sales of hens to others who desired to use pure-bred Plymouth Rocks. Wardotte, an Indian Game fowl to grade up their flocks, saying that such stock will give birds that are heavier, for which they are willing to pay two or three cents a pound more than for the scrub fowl. They have even assisted in getting good stock for those who could not purchase it themselves, it is said. This is not because of their philanthropy, or from a desire to benefit the farmer, we suppose, but because they find it more profitable to handle the heavier fowl, even though they pay higher prices for it.

Poultry and Game.

There have been liberal receipts of fresh-killed Western poultry, which holds prices well down on all grades. There are sales of some Northern and Eastern fresh-killed chickens at 15 to 16 cents for choice large, but fair to good go at 10 to 13 cents. Some extra choice fowl reach 12 to 13 cents, but more sell at 10 to 11 cents. Ducks are steady

at 12 to 14 cents and geese at 10 to 12 cents. Pigeons \$1 to \$1.25 a dozen and squabs \$2.50 to \$3.50. Western dry-packed chickens, selected, are 12 to 13 cents, and average best at 10 to 11, but common lots are 9 to 10 cents. Fowls, choice, are 9 to 10 cents, and light-weight common 9 cents. Capons are selling better at 13 cents for such as weigh seven pounds or over, medium 11 to 12 cents, small and slips 10 cents, and old roosters 7 to 7 1/2 cents. Ducks 10 to 12 cents and geese 8 to 9 cents. Small hen turkeys are scarce and choice at 12 cents drawn and 11 1/2 undrawn, but heavy birds are in good supply. Mixed weights 10 to 11 cents, large hens 9 to 10 cents, young toms 9 to 9 1/2 cents, and old toms 8 to 8 1/2 cents, with No. 2 at 8 cents. Receipts of live poultry are at 10 cents, chickens 7 to 9 cents and roosters 6 cents.

Not much demand for game now. Choice ducks are \$1.25 to \$1.35, but light are dull at 90 cents to \$1.10, quail steady at \$2 a dozen for choice, and \$1.25 to \$1.75 for poor to fair. Canvas back ducks \$1.50 to \$2.50 a pair, red head \$1.25 to \$1.50 and mallard 75 to 90 cents, black 75 cents to \$1.00. Deer scarce, nominal at 14 to 20 cents whole and 18 to 22 cents for saddles, choice cuts 25 to 30 cents.

Borticultural.

Early Grafting.

Many an apparently worthless fruit tree can be converted into a profitable and satisfactory bearer by grafting some kind on it, and if the work is done properly and early enough the old stock will prove to be a valuable possession. There are many orchards where grafting should be followed regularly every season. After every one has planted a tree and it has reached maturity without giving satisfaction, it is the height of folly to let it continue another season. Do not cut it down, but simply graft some new kind of fruit on it that will pay. Time and again one is led to plant new varieties of fruit trees on the recommendations of friends or agricultural journals, and then for one reason or another disappointment follows. The trees do not thrive well in the soil or climate, the fruit is not marketable or insect enemies attack it every year so as to destroy its fruit. The only way to handle such a problem is to cut off its leading shoots and graft some old standard variety on it. When I read of disgruntled farmers cutting down their fruit trees because they have been disappointed in their bearing, I am constrained to believe they must be amateurs at the business. Why, the full-grown stock in any orchard is worth half the battle. We spend ten, fifteen and twenty years in bringing this stock to a size which will make it bear well, and then somebody cuts it down through ignorance.

In grafting we have an art that makes fruit growing a steady and reliable industry. We need to study it more, to practice it more, and make it a work whose results we can foretell. The old wild apple stock along the field hedges. Graft some good marketable variety to it, and in a few years we convert a dead loss into a profit of several dollars a year. The cost is mere nothing. In grafting, however, it should be made certain that the scions have come from good trees, and that they are what they should be. Nurserymen now graft indicators in winter, and they prepare grafts ready for the farmer's immediate use. These grafts are prepared and kept in bundles in sand in a cool cellar until spring, and then they are put out as soon as spring weather permits. But there is no reason why every farmer should not obtain his own grafts direct from his own trees, or from some neighbor's orchard. A simple method of exchange of grafts in this way would be of mutual benefit. Let each one give to the other scions from their best trees, and in this way the experience of one will be of help to another. Grafting is really one of the oldest and simplest ways of increasing trees, and of producing an abundance of excellent fruit on short notice. The time to graft outdoors is in the spring, and just as the buds are about to burst and the sap to flow upward. S. W. CHAMBERS.

Great Value of Legumes.

Perhaps no discovery has been made during the century just closed, which is of more importance to farmers generally than the fact that leguminous plants (peas, beans, lupines and the clovers) not only draw the most important and expensive parts of their food from the atmosphere, but have the power to store away the nitrogen so gathered into the soil in which they are growing through small nodules on their roots, so that instead of impoverishing the soil of its fertility as do most other plants, they leave it actually richer in the most costly element of plant food.

Thus the great problem of quickly and cheaply restoring the lost fertility to old and worn-out soils has been practically solved.

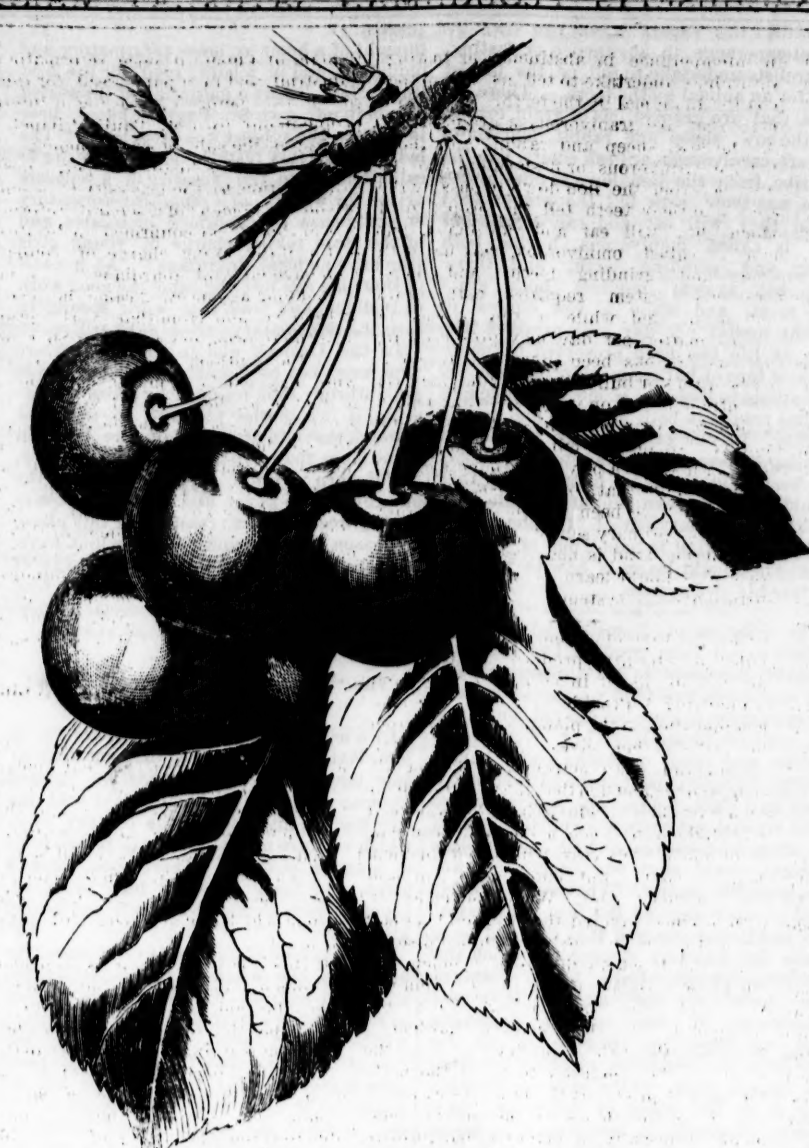
BAD BLOOD

Reveals itself in many ways. Sometimes the impurities in the blood mark and mar the skin with blotches, pimples, boils or other eruptions. Sometimes the result of bad blood is rheumatism or a debilitated condition which is popularly described as "feeling played out, hardly able to drag myself around."

The impurities and poisons which corrupt the blood, clog the liver and cloud the skin are removed by the use of Doctor Pierce's Golden Medical Discovery. It does more than eliminate the poisons; it increases the activity of the blood-making glands so that there is an increased supply of pure, body-building blood. It brightens the eyes, cleanses the skin, and gives new, physical energy.

"I thank God for the good your medicines have done me," writes Mr. James M. Sizemore, of Mitchell, Lawrence Co., Ind., Box 507. "I was not well for two years. My throat was always sore, head ached, and back ached nearly all the time. My weight was 155 pounds when I was taken sick with typhoid fever, and when the fever left me I had such a pain in my left side I could not breathe without pain. My wife went to the drug store and procured a bottle of Dr. Pierce's Golden Medical Discovery and a box of his 'Pleasant Pellets.' I discontinued the use of my doctor's medicine and began with the 'Golden Medical Discovery' and 'Pleasant Pellets.' I once began to feel better; the pain soon left my side and I could breathe with ease. In a week or so I felt so good I could not stay in the room. I began to walk about the streets; I felt better each morning. After a month's use of the medicine I was well. That was over a year ago. Now I weigh 184 pounds and feel better than ever in my life."

Dr. Pierce's Pleasant Pellets cure constipation.



KNIGHT'S EARLY BLACK CHERRY.

Instead of purchasing a costly fertilizer, rich in nitrogen, it is found to be only necessary to apply a cheaper grade, containing potash, lime and phosphoric acid, on which can be grown a heavy crop of cowpeas or clover, which will complete the balanced ration by collecting and storing the more costly element, nitrogen, after which grass and grain crops will make a heavy growth.

Ordinary grass and grain crops are very exhausting upon the soil, as they draw therefrom their entire food supply, while the legumes add to the soil the most valuable and costly element, thus leaving it richer instead of poorer. Like some men, they leave the earth better for having lived upon it. At the same time the leguminous plants make better hay and grazing than grass plants. The herbage of the legumes is more succulent, more digestible and richer than that of grasses.

Legumes will grow and thrive upon soil too poor, or deficient in elements required, to produce or support a stand of grass, and will yield a heavier crop than most grasses. Nothing but custom and prejudice favors the continued growing of grasses in meadow and pasture to the exclusion of cowpeas and clover. I. F. T.

Domestic and Foreign Fruit.

The receipt of 8215 barrels of apples and export of 6257 barrels here last week is a contrast to the same week a year ago, when 2927 barrels were received and none exported, as is the amount exported from here since the season began of 401,306 barrels against 176,741 barrels to same date a year ago, and 217,948 barrels to same date in 1899. The surplus of about 2000 barrels may be considered a fair week's supply for Boston and the suburbs at this season of the year, and maintains prices at a steady range. Spy are \$2.50 to \$3.50 a barrel. Baldwin, fancy cold storage \$3 to \$3.25, fresh packed No. 1 \$2.50 to \$3, and No. 2 Baldwin and Greening \$1.50 to \$2.25, with Talmat Sweet at \$1.50 to \$2.50. Cranberries dull at \$7.50 to \$8 for choice dark, \$6 to \$7 for medium, boxes \$2 to \$2.50. Florida strawberries in fair supply at 25 to 35 cents a quart. Florida oranges growing at \$3.25 to \$4 for good to choice bright or russet.

But the scarcity of these is made up by the receipts of 38,300 boxes from California last week, the sale of 35 carloads on Monday and 40 more cars offered for Wednesday. Prices are liable to go below today's quotations of \$1.75 to \$2 a box for seedlings, and navel \$2.25 to \$3 for 176, 20 or 216 counts, and 120 or 150 counts at \$2 to \$2.25, 112 counts \$1.87 to \$2.25. Only few Jamaica oranges at \$4 a barrel or \$3.50 to \$4 a box. California grape fruit from \$2.75 for fair to \$4 for fancy and some Florida at \$5 to \$6 for choice and \$4 to \$4.50 for fair to good. California lemons \$1.75 to \$3 a box. Some of the California fruit damaged in the transportation, which is cause of wide range in prices. Messina and Palermo lemons 300 to 360 counts, fancy \$3.50 to \$3.75, and choice \$2.02 to \$3. Malaga grapes clearing up at \$4 to \$6 a cask. Turkish figs at 8 to 12 cents a pound, dates at 3 to 4 cents. Bananas quiet at \$1.50 to \$2.50 a stem as to condition and size of bunch.

Vegetables in Boston Market.

There is a good supply of winter vegetables in market and a fair supply of Northern produce, so that in many cases prices are lower. Old beets are steady at \$1 to 50 cents a box and bunch beets lower at \$1 to \$1.25 a dozen, but beet greens higher at 75 to 85 cents. Carrots quiet at 40 cents and parsnips varying in quality from 50 to 65 cents a bushel. Flat turnips 35 to 40 cents a box, white French round at \$1 to \$1.25 a barrel, and yellow steady at \$1 to \$1.10. Native onions scarce and good ones firm at \$3.75 to \$4 a barrel. Bermuda more plenty at \$3 to \$3.15 a crate. Leeks are 40 to 50 cents a dozen and radishes 40 cents. Cucumbers lower at \$9 to \$11 per hundred. Peppers \$3 per crate. Hothouse tomatoes 30 cents a pound and Southern \$3 per crate. Rhubarb steady at 7 to 8 cents a pound. Celery from \$7 to \$11 per box. Asparagus as to quality and size of bunch from \$1.50 to \$4.50 a dozen. Hubbard squash \$1.50 per hundred pounds. Marrow and turban \$2 a barrel. Cabbages in better supply at \$1.50 a barrel. Sprouts 25 cents a quart. California cauliflower \$2.50 to \$2.75 a crate, and Norfolk kale 75 cents to \$1.25 a barrel. Lettuce from \$1.50 a box for large solid down to 75 cents for inferior. Southern spinach \$1.75 a barrel, dandelions \$1 to \$1.25 a box and parsley the same, with endive 75 cents to \$1 a dozen. Egg plant scarce at \$3 to \$3.50 a crate. String beans lower at \$3 to \$3.50 a crate. Mushrooms good to fancy 40 to 60 cents a pound.

The Hay Trade.

The hay market continues strong, with arrivals here of only about sufficient amount to meet the regular demand for best grades, which are moving promptly, but at some points there are accumulations of low grades, which may lead to a cutting of prices when the railroads are ready to move goods that are awaiting transportation. Two hundred and eighteen cars reached Boston, of which 87 were for export and 16 cars of straw. Same week last year, 113 cars received, 9 of them for export, and 4 cars of straw. Notwithstanding this increase in receipts, the demand was active enough to prevent any shrinkage in prices. Choice timothy is at \$18.50 to \$19, in large bales, and \$18 to \$18.50 in small bales. Either size No. 1, \$17.50 to \$18, No. 2 \$16 to \$17, No. 3 clover and clover mixed at \$15 to \$16. Straw, long rye at \$16 to \$17, tangled rye \$11 to \$12 and oat at \$9 to \$9.50.

The Hay Trade Journal gives the highest prices March \$10.50 at Jersey City, \$19 at Boston, New York and Brooklyn, Atlanta \$18.75, Baltimore, Philadelphia and Richmond \$17, Buffalo \$16, Pittsburgh and Nashville \$15.50, Memphis \$14.50, Cincinnati \$14.25, Duluth and Chicago \$14, St. Louis \$13.50, Minneapolis \$12.50, Kansas City \$10.50, wheat hay at San Francisco \$13, prairie hay at Duluth and Chicago \$12, Pittsburgh \$11.50, Minneapolis \$10.50 and Kansas City \$9.

The receipts of hay at New York during the week by all routes were 6225 tons, against 6880 tons previous week and 7870 tons for same week last year. Exports were 9854 bales, against 12,395 bales previous week, but the local demand generally good. Brooklyn receipts were light, with little prime, not much No. 1 and bulk grading from a fair No. 2 to good No. 3. Clover grades selling slowly. Receipts at Jersey City lighter than for some time. Not enough top grades to fill demand, and consequent good demand for medium and lower grades timothy and No. 1 light clover mixed.

Canadian hay is reported by the Montreal Trade Bulletin as in good demand for export to Great Britain and United States, and considerable space on ocean steamers from Boston and New York has been contracted for, while 2942 bales went last week from Portland and St. John. A New York firm is buying hay here for the British Government and paying \$10 to \$10.50 for No. 1, \$9 to \$9.50 for good to choice No. 2, ordinary No. 2 \$8.50 and \$8 for clover mixture, f. o. b. cars around Louisville, P. Q. There is some trade for Glasgow and Leith, and some lots for Antwerp going forward.

Government Crop Report.

The Government report estimates wheat in farmers' hands March 1 at 128,100,000, against 158,745,000 March 1, 1899, 198,000,000 two years ago, and 129,000,000 average past ten years, in which period the minimums were 75,000,000 in 1895 and 88,000,000 in 1897, and maximums 198,000,000 in 1899 and 171,000,000 in 1892. Percentage of crop left in farmers' hands is 24.5, against 29.0 last year, 29.3 in 1899 and 25.5 past ten years average.

The corn farm reserve is 770,000,000, against 774,000,000 last year, 800,500,000 in 1899 and 709,000,000 average past ten years, in which period the minimums were 475,000,000 in 1895, and 542,000,000 in 1897 and 1,072,000,000 in 1896. Percentage of crop left is 36.9, against 37.2 last March, 41.6 in 1899, and 41.3 past ten years average. In March, 1891, there was 51 per cent. of the crop left on farms, and in 1896, 49.8 per cent.

The oats farm reserve is 292,000,000, or 36.2 per cent. of the crop, against 291,000,000 last March, 283,000,000 in 1899 and 272,000,000 in 1898. Adding to 128,000,000 wheat farm reserve, the total supply wheat and flour March 1 in all positions other than producers' hands of 118,000,000, per Chicago trade bulletin estimate, makes grand total supply March 1 of 246,000,000. Deducting 29,000,000 for spring seedling and 10,000,000 for food for four months to July 1, would leave only 107,000,000 for exports to July 1, and for carry-over reserves to new crop year.

Exports since Jan. 1 have shown weekly average of 4,500,000, and since July 1, 1900, weekly average of 3,800,000. Accepting the

latter average in figure of the fact of late increased foreign requirements and resultant late increased outward movement, total exports for 173 weeks, March 1 to July 1, would be over 67,000,000, which, deducted from the 107,000,000, as above, would leave only 40,000,000 July 1, 1901, for farm reserve, for visible supply, and for supplies in all positions in second hands.

The farm reserve alone July 1, 1900, was 60,000,000, and stocks in second hands, per Bradstreet, 64,500,000, making 124,500,000 total, or three times the above estimate of total supplies July 1 next. The problem is a difficult one in view of the increased European call upon American through decrease in Argentine surplus, and of America's decreased supplies.

The New York Markets.

There have been liberal receipts of potatoes with a light trade, and they are weak at quotations. Long Island in bulk \$1.50 to \$1.75 a barrel, Jersey prime \$1.25 to \$1.50. State and Western, bulk \$1.25 to \$1.60 for 180 pounds and sacks \$1.40 to \$1.50 each. Bermudas are slow at \$4 to \$5 for prime and \$2 to \$3.50 for No. 2. Havana \$3 to \$4. Sweet potatoes in good supply and weak at \$1.75 to \$2.25 for Vineland and \$1.50 to \$1.75 for other Jersey per barrel, baskets 75 cents to \$1. Domestic onions in light supply and firm. Connecticut and Long Island white \$4 to \$6.25 a barrel, yellow \$3 to \$4.50, red \$3 to \$4. State and Western \$3 to \$3.50 for yellow and \$2.75 to \$3 for red. Orange County bags, white \$3 to \$5, yellow \$3 to \$3.75 and red \$2.75 to \$3.25, Havana \$2.75 a crate and Bermuda \$2.50 to \$3.

Old beets dull at 75 cents a barrel, new Florida and Bermuda in demand at 75 cents to \$1.25 a crate. Bunches \$3 to \$4 per hundred for New Orleans and \$4 to \$6 for Florida and Charleston. Old carrots 75 cents to \$1 a barrel. Bermuda same per crate. Southern per 100 bunches \$2 to \$3. Parsnips higher at 90 cents to \$1.12 per barrel and Bermuda turnips 70 to 90 cents. Celery, State or California per dozen large 60 to 75 cents, medium 30 to 50 cents, small 15 to 25 cents. Florida \$1 to \$3 a case. Hubbard squash \$1.25 to \$1.50 a barrel, and marrow \$1 to \$1.25, with new white from Florida at \$2 to \$3 per crate.

State cabbage steady at \$14 to \$18 per ton, and Florida in demand at \$1.50 to \$2.25 barrel crates. Cauliflowers, Florida \$2 to \$3 a basket, and California, same fancy at \$2.50 a case, but mostly poor at \$1 to \$2. Sprouts 75 to 125 cents a quart. Norfolk Kale 50 cents to \$1.25 a barrel, and spinach \$1.25 to \$2. Florida egg plant \$1.50 to \$2.50 a box. Tomatoes average poor. Florida carriers \$1 to \$2.50, and Havana 75 cents to \$1.50. Florida peppers \$1 to \$2 a carrier. Green peas \$2 to \$3 a basket for Florida, \$1.50 to \$2.50 a box for California. A light supply but not prime quality and dull. String beans scarce and firm at \$2 to \$4 a crate. Parsley \$1 to \$1.50 a box for Bermuda, \$1.50 to \$2.50 per 100 bunches for New Orleans. Okra, Havana \$1 to \$2 per carrier.

Lettuce, one-half barrel baskets Florida \$1.50 to \$2.25 for collins 75 cents to \$1.25, Long Island Orleans \$2 to \$4. New Orleans chicory \$4 to \$6 a barrel, escarol \$4 to \$5, remain the same, with crates from Bermuda at \$1 to \$1.50, and Florida baskets at \$1.50 to \$2. Hothouse products in fair demand. Choice heavy lettuce quick at \$1 to \$2.75 a dozen, but average dull at \$1 to \$2 a case. Cucumbers dull at \$1 to \$1.25 a dozen for prime to choice, and 60 to 75 cents for No. 2. Tomatoes fair to prime 20 to 30 cents a pound, radishes \$1.50 to \$2.50 per hundred bunches, asparagus \$6 a dozen, rhubarb Western 25 to 60 cents a dozen, Long Island \$4 to \$5 per hundred. Mushrooms poor to prime 20 to 40 cents a pound. Some California out-door asparagus \$3 to \$7 a dozen, as to quality and size of bunches.

Apples in large supply, and weather bad for trade, Spitzenberg \$3 to \$5 a barrel, Newtown Pippin \$1.25 to \$4. Spy and Ben Davis \$2.50 to \$4. Baldwin fancy, \$3 to \$3.50, average prime \$2.50 to \$3. Greening prime to fancy \$3.50 to \$4, good to prime \$2.50 to \$3.25. Cranberries dull, but steady, at \$8 to \$9 for good to choice Cape Cod, \$6.50 to \$7.50 for common to fair, Jersey prime \$6.50 to \$2 to \$2.25 a crate. Florida strawberries in better supply and lower at 20 to 30 cents a quart for prime to fancy and 15 to 18 cents for poor.

Hood Farm Stock Turns Out Favorably.

Dr. C. C. Beebe of Racine, Wis., is now the owner of the Hood Farm bull, Hood Combination, and says he is the best bull he ever saw. The animal is now three years old. Dr. Beebe sent him to the State Fair last fall, and he took second prize, while one of his sons took first. A glance at the pedigree of Hood Combination at Hood Farm, Lowell, Mass., shows that he could not well be otherwise than a great bull.

His sire is Hood Farm Pops, the great show bull and prize winner, whose dam, Kathie's Fancy, milked in two consecutive years 22,374 pounds.

The dam of Hood Combination is Onwa, test 18 pounds 13 ounces, and milked in one year 10,230 pounds, testing 68 pounds, 15 cents butter. One of the grandest of Onwa, milked in two years 23,141 pounds 10 ounces, testing 121 pounds 10 ounces butter, and in three years she gave 30,814 pounds 1 ounce milk which tested 1600 pounds 6 ounces butter.

Any one who is looking for first-class dairy stock should watch the Hood Farm advertisements that appear in this paper every week.

Clouds of all kinds are composed of little globules of water. The globules are very small, though big enough to see with the naked eye. Balloons, catching them on their coats, have often examined them with magnifying glasses, and the same thing may be done on high mountain tops. It used to be supposed that the globules were hollow like soap bubbles, because it was not easily understood how otherwise they could be held suspended in the air; but this notion has been exploded. Every globule has a particle of dust for a nucleus. If it were not for dust there would be no clouds and no rain, because the water in the atmosphere would have nothing to condense upon.

The total catch of fish in Canada for the year 1900, as reported by the fisheries department, was 1,700,000 tons, being an increase of \$2,250,000 over the yield of the previous year. The catch for the Province of Quebec was worth \$1,053,154, an increase over the preceding year of \$191,094.

The visible supply of grain Saturday, March 11, as compiled by the New York Produce Exchange, is as follows: Wheat 55,800,000 bushels, decrease 1,341,000 bushels; corn 11,044,000 bushels, increase 1,250,000 bushels; oats 10,388,000 bushels, increase 288,000; rye 1,115,000 bushels, decrease 48,000; barley 1,365,000 bushels, decrease 175,000 bushels.

The shipments of leather from Boston to the past week amounted in value to \$302,643, previous week \$109,082, similar week last year \$180,848. The total value of exports of leather from this port since Jan. 1 is \$1,704,327, against \$2,014,464 in 1900.

The total shipments of boots and shoes from Boston this week have been 85,211 cases, against 77,085 cases last week and 90,904 cases in the corresponding week last year. The total shipments thus far in 1901 have been 840,891 cases, against 900,091 cases in 1900.

Pork and lard products are unchanged: Heavy hams, \$17.25; medium, \$16.25; long cut, \$17.75; lean ends, \$19.25; lean pork, \$13.75; fresh ribs, 10 cents; corned and fresh shoulders, 8 1/2 cents; smoked shoulders, 8 1/2 cents; lard, 6 1/2 cents; in pails, 9 1/2 cents; hams, 10 to 11 cents; skinned hams, 11 1/2 cents; sausages, 9 cents; Frankfurt sausages, 9 cents; boiled hams, 10 to 14 cents; boiled shoulders, 12 cents; hocks, 12 1/2 cents; bolognas, 8 cents; pressed ham, 11 cents; raw leaf lard, 9 cents; rendered leaf lard, 9 1/2 cents; in pails, 10 to 14 cents; pork tongues, \$22; loose salt pork, 9 cents; brisquets, 10 cents; sausage meat, 7 cents; city-dressed hogs, 8 cents; country, 7 cents.

Eggs are lower, coming freely and nearly all of same quality. Some nearby and Cape fancy are sold at 18 cents, but are really no better than the choice fresh Northern and Eastern at 15 to 16 cents and fair to good are 14 cents. Western fresh are 15 cents for fancy, 14 cents for selected fair to good Western 13 to 14 cents, and good to choice Southern 13 to 14 cents.

The world's shipment of grain last week included 7,101,528 bushels of wheat from four countries, and 4,431,137 bushels of corn from four countries. Of this the United States furnished 4,229,528 bushels of wheat and 3,566,137 bushels of corn.

Exports of dairy products from New York last week included 4102 packages of butter to Liverpool, 50 to London, 26 to Bremen, 50 to Hamburg and 400 to Copenhagen, and Christmas, 250 boxes of cheese to Liverpool and 620 to London, at a total of 4888 packages of butter and 370 boxes of cheese.

The Grape Belt of Chautauque County, N. Y., says that the conditions there up to and including March 6 have not been such as usually destroy grape buds and those of tender peach trees, that is, cold nights followed by rapidly rising temperature the next day. They have had several frosts upon two nights, but think that the buds are not yet hurt, while heavy rains just before winter set in and a snow covering have protected them from the dry rot freeze. Reports of black rot and white rot in that section are untrue, but in western orchards in northern Ohio have been much troubled growers should be on their guard against these diseases.

There was a rather better demand for beef, but still trade is unsatisfactory. The West is still firm. Fancy sides 8 1/2 cents, choice 7 1/2 to 8 cents, good 6 1/2 to 7 1/2 cents, light and grass 6 1/4 to 6 1/2 cents, cows 6 to 6 1/4 cents, fancy hinds 10 1/2 cents, extra 10 to 10 1/2 cents, good 9 to 9 1/2 cents, fancy fives 6 cents, heavy 4 1/2 to 5 cents, good 4 1/2 cents, light 5 cents, backs to 7 1/2 cents, rattier 4 1/2 to 4 1/4 cents, chunks 4 to 4 1/2 cents, short ribs 10 to 10 1/2 cents, rounds 8 1/2 to 9 cents, rumps 8 to 12 cents, rumps and loins 8 1/2 to 12 cents, loins 10 1/2 to 13 1/2 cents.

The shipments of live stock and dressed beef last week included 1829 cattle, 1075 sheep, 702 quarters of beef from Boston, 1470 cattle, 1426 sheep, 18,115 quarters of beef from New York, 1440 cattle, 1300 sheep from Baltimore, 1066 quarters of beef from Philadelphia, 1678 cattle, 2567 sheep from Portland, and 351 cattle from Newport News; a total of 6186 cattle, 6708 sheep, 27,113 quarters of beef from all ports. Of this, 2376 cattle, 2907 sheep, 6223 quarters of beef went to London, 3463 cattle, 2761 sheep, 26,890 quarters of beef to Liverpool, 300 cattle, 300 sheep to Glasgow and 47 cattle, 240 sheep to Bermuda and West Indies.

The exports from Boston for the week ending March 8 were valued at \$1,500,161 and the imports at \$1,670,272. Excess of exports, \$230,889. For the corresponding week last year exports were \$400,000 and imports \$275,508. Since Jan. 1 exports have been \$27,445,120 and imports \$11,710,071. Excess of exports, \$15,735,049. For the corresponding time last year exports were \$18,672,872 and imports \$15,315,300. Excess of exports, \$3,357,572.

Traffon makes the exports from the Atlantic coast last week to include 235,100 barrels of flour, 1,965,000 bushels of wheat, 2,712,000 bushels of corn, 330 barrels of pork, 14,005,000 pounds of lard and 30,424 boxes of meat.

GRAVES' MANGE CURE

For Dogs, Cats, Horses, Cattle and Sheep. All Skin Diseases they are subject to can be cured by this valuable remedy. Also

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Our Homes.

Dress and the Woman.

It is sometimes said that clothes do not make the person; but while that may be in a measure true, it is quite as correct that all persons are in a degree influenced by the clothes they wear, and that as an outward expression of inward grace, or the contrary, there is no truer indication.

To those not blessed with an abundance of means, there come seasons—or rather between-seasons—when the entire wardrobe appears to have suddenly grown rusty and woebegone in appearance. This is especially the case in the late winter and early spring, after the long months of hard wear, and while yet motives of health and economy preclude a change.

One is painfully conscious of worn edges and a general lack of freshness of attire, and the most conscientious attention to detail and care in the general make-up does not suffice to restore the self-respect one experienced when one's garments were new.

It is a question if much of the spring "tired feeling" of which we hear may not be attributable to this cause. Certain it is that with the donning of Easter raiment one's physical (?) woes are largely forgotten.

While undue attention to and extravagance in dress may be an indication of weakness and shallowness, it is equally true that indifference and inattention to personal appearance betoken at least a lack of appreciation for the fitness of things. It is certainly a greater pleasure to listen to a cultivated woman if she is pleasing to look upon. Physical beauty may be lacking, but with a well-fitting gown of harmonious coloring, suitable for the occasion on which it is worn, with the person made attractive by careful grooming—we dislike the word, but no other expression so much—one's power and influence is inestimably increased.

We once knew a man whose special pride was a beautiful horse, which he often drove with a carriage and fittings upon which extreme care and attention were lavished. Yet when all was in readiness he would take his own seat, unshaven, and wearing a coat and hat of most disreputable appearance, completely spoiling the effect he so much desired. So it is with the mistress of a beautiful home, who fails to make her person and her toilettes harmonize with her surroundings.

There is no surer sign of degeneracy in a woman than a lack of interest in her apparel. We were once much impressed by the remark of an elderly woman, in commenting upon a younger one who had experienced a crushing sorrow, from which her friends feared she might not rally, and who had previously been noted for her immaculate dressing. In spite of her unhappiness she did not grow careless in that respect, and because of that fact the older woman said, "I have no fears for her. Her heart is not broken."

The advance of a feeling of indifference in matters of dress should be resisted as strenuously as one would ward off a disease which was undermining one's life. It indicates decadence in some particular. Business women especially should guard against such approach. It is so easy to become careless when one is tired and is left to oneself. Yet who has not experienced a sensation of restfulness and refreshment when the temptation to forego a fresh evening toilette has been successfully resisted.

We recall the story of an Englishman who in seven years spent alone upon a Western ranch never omitted to make an evening toilette, and thereby felt himself in touch with civilization. The incident might well serve as a text for innumerable sermons. There is no surer conservator of the virtues and graces than the self-respect one feels when carefully and appropriately dressed. Then and then only is one unconscious of self.

ELIZABETH ROBBINS BERRY.

The Workbox.

LADIES CROCHETED PETTICOAT.

Material: Ten hanks red, one hank navy blue Fleisner's zephyr, one hank navy blue one hank navy blue No. 3.

Chain 210 stitches with red for the top. Make 1 row of double crochet, then 1 row of treble crochet.

(Double crochet is insert needle in stitch, draw wool through, then through 2 stitches on hook. Treble crochet is yarn over hook once, insert hook in stitch, draw yarn through 2 stitches twice.)

Next row—One double in each of next 2 stitches, 3 double all in next stitch, and 1 double in each of next 2 stitches, pass by 1 stitch, then 1 in each of next 2 stitches; turn.

Next row pass by 1 stitch, then 1 double in each of the 2 doubles in previous row, 3 double in centre of the 3 double in previous row, 1 double in each of next 2. Repeat to end of row.

Repeat the last row 24 times, always working in the front half of the stitch (in all the remaining rounds work in back part of stitch for ribbed effect) and around the skirt instead of back and forth.

Next round—One double in each of 6 stitches, 3 in next, and so on around.

In the next 16 rounds make 3 double in the middle stitch of the cluster of double double, 1 double in each of the next 4, pass by 2, then 1 double in each of the next 4, and repeat the entire round.

Next row, make 5 double in the middle of the group of 3, then 1 double in each of next 10, and repeat for the round.

Next 11 rounds make 3 double in the middle stitch of the cluster, double double, 1 double in each of next 6, pass by 2, 1 double in each of next 6, repeat for the round.

Next round, 5 double in centre of the cluster of 3, 1 double in each of the next 14 stitches, repeat.

Next and all remaining rounds as follows: Three double in centre of the cluster of

double, and 1 double in each of next 8, pass by 2, 1 double in each of next 8, repeat round, 8 more rounds of navy blue and red alternately, then 5 rounds of scarlet and finish with 1 round of navy blue.

Crochet edge round top of skirt.

EVA M. NILES.

Prevention of Mouth Breathing.

In a former article we considered some of the evil effects of mouth breathing, and saw that it resulted in injury to the entire respiratory system, as well as in actual deformity of the bones of the face. The cause of mouth breathing is, of course, anything that interferes with the free passage of air through the nostrils. Thus in the early stage of an ordinary cold the membranous lining of the nostrils becomes swollen, the nose becomes "stopped up," and the sufferer must breathe through the mouth, to his added discomfort. This is only temporary, yet it is by no means unimportant, for while it lasts it exposes one to inflammation of the tonsils, throat and lungs through the inhalation of cold and unfiltered air.

Of greater importance, however, are the causes of habitual mouth breathing, from which so many children suffer. The most common of these is a collection of glandular tissue in the pharynx, and whenever a young child is seen to breathe habitually with open mouth, an examination for these growths should be made.

Physicians sometimes hesitate to remove them, for they say they will probably disappear as the child grows older; but they may not disappear, and even if they do, it may be only after permanent damage has been done to the child. They ought always to be removed when they are voluminous enough to obstruct nasal respiration.

A somewhat less common cause of habitual mouth breathing is the presence of enlarged tonsils—a condition which may or may not coexist with that just mentioned. These also will probably grow smaller as the child grows older, and is far better to remove them at once, before irremediable damage has been done.

Less frequently the nostrils are obstructed by growths known as polypi, from their lining mucous membrane.

The treatment of most of these conditions is simple, but as it can be carried out only by the physician, it need not be discussed here. The aim of this article is to urge the necessity of seeking medical advice for any one, child or adult, who habitually breathes through the mouth, in order that more serious trouble may be averted.—YOUTH'S COMPANION.

Chicken—How to Carve.

Chickens may be carved in different ways. Stick the fork in the leg and lift it up, meanwhile holding down firmly the rest of the chicken. Then cut through the joint, separating the joint from the body; next stick the fork in the wing, cut through the wing, cut through the joint and loosen the meat around it, pull down with the fork and press firmly on the carcass with the knife and pull all the meat from the breast with the wing; then cut each breast crosswise in half, proceed and carve the other side the same way; the meat may be reconstructed, giving the chicken its original form again.

Another way is to cut off the legs, the second joints, and the wings at the first joint; then cut the breast in three pieces lengthwise, leaving a small piece of wing attached to the side pieces of each breast. Cut the back of chicken in two or three pieces. And a more economical way is to carve the chicken in the kitchen. First cut off legs, joints and wings; then lay the chicken on a carving board, and with a heavy knife cut the chicken in pieces about two inches wide, the same as cutting a loaf of bread, arrange the meat nicely on a hot dish and garnish with parsley. If there is a dressing in the chicken, it should be taken out before the chicken is cut on the board; lay the dressing in centre on a dish and dress the meat around it. Geese and domestic ducks may be carved the same way.—N. Y. Ledger.

When Baby Has Earache.

Earache is a common ailment of babies; they often suffer much and are frequently treated for other troubles before the real one is discovered, writes Marianna Wheeler, in Harper's Bazar. A child with an earache will waken suddenly from a sound sleep with a sharp cry, and usually puts his hand to his ear, after a short crying spell he begins to doze, but falls asleep, only to waken again later with another paroxysm. Heat of any kind applied to the ear will almost always give relief, but if it does not the doctor should be called. A small hot-water bag placed against the ear, or a small muslin bag filled with hops, bran or salt—in fact, anything which will hold heat long, heated in the oven, then applied to the ear, will usually stop the pain. If the attack occurs at night it is not always convenient to procure one of these things, then the hand placed over the ear will afford some help; a flannel is still better, whether it be the baby's hand, his shirt or his petticoat; it can be heated very quickly by holding it against the gas shade, or, better yet, the chimney of the lamp. If a little hot water can be had syringe the ear with it, temperature 110° to 115°, then apply the hot flannel.

Exercise and Health.

Regarding the statement recently attributed to a Chicago physician to the effect that physical exercise was not only unnecessary, but detrimental to health, the New York Journal has an editorial which is well worth reading. The editor says:

Question the men you know past middle age as to their condition. Many will tell you their trouble is kidney disease. Doctors will tell you that kidney disease, which is

usually avoided, destroys great numbers, especially among the prosperous, among clerks confined by long hours, school teachers and others who get insufficient exercise.

Men die of kidney disease because the kidneys are worn out and poisoned. The kidneys are compelled to do the work to carry on the processes of elimination which really ought to be attended to by the pores in the skin. We want to remind you again, in case you are doubtful about the importance of exercise, of the part which the pores of your skin play in your interior economy.

There are spread over the surface of your body, if you are a man of average size, about seven million pores. Each of these is a quarter inch deep, and the total length of the pores in your skin would be equal to about twenty-three times the length of the Brooklyn Bridge. These pores day and night eliminate from your body its poisons and impurities. If you don't take exercise, if you don't perspire and keep the pores open, the work which those pores should do is thrown upon the kidneys. The kidneys cannot do the work. Your blood is poisoned, and kidney disease comes along to claim you. A keen student of health remarked to this writer the other day that in winter there are many more deaths from kidney disease than in summer.

This is due, of course, to the fact that in winter the pores of the man who does not exercise are even more clogged up than usual. The pores of the man who exercises to some extent, although not enough. We inherit from our ancestors big muscles and abundant animal tissues accustomed to violent exercise. We may in time develop a race of men able to live without physical movement. But woe to the man who tries in his own one generation to change the physical habits of thousands of generations that preceded him.

New Modishness in Jewels and Jewel Wearing.

The world is making for freedom in every direction and no one so well started on that road as women; but in spite of their educational advancement and privileges many of them remain as confirmed in obedience to La Mode as ever they were. If proof were wanting, what so convincing as that earrings are once more actively modish, and that small fortunes are spent for the choicest pearls and diamonds to ornament ear lobes in a barbarous way. These grace the ears of all who can afford their price, and when that is not possible, the imitations take their place. Such gems are for grand toilettes alone, if worn by those bred to the wearing of them, and so it comes that the novelty of a negligee earring is the latest fashion.

Under the name of a child's finger ring, of gold and called "creoles." Their lightness is their charm, and to take away from these golden circles their commonplace appearance, a riviere of fine diamonds is added to both sides. Such plain gold earrings, many years ago, were purchased for wear after the savage process of ear piercing had been performed. They were retained in the ears until they were entirely healed, and the modish ornament of the day took its proper place. They were known also as "sleepers," as they were not taken out when retiring for the night, as other earrings are.

For, while those smart women who wish to keep up with this latest cry must give orders for creoles, as they are not yet counted "in stock" at the leading jewelers, which makes them all the more desirable to those whose aim is exclusiveness. Solitaire diamonds, set into finger rings, are smartest if they are encircled by the finest rubies to be had. This is now the chic way of setting single diamonds. New are diamond rose brooches where the petals are in two, three and four rows and one of the most fascinating and beautiful of brooches has the setting of all its petals fringed with these lovely rubies. Indescribably entrancing is the combination as well as the effect when the perfect diamond gains further beauty if mated with rubies, while the rubies glow in intensity of color under the radiance of the diamond. This brooch is also made up in other designs.

Finger rings remain tres grande mode—and if it were possible are more costly than ever. Their regal sumptuousness outranks the treasures of crowned heads over the world. There is a fashion which obtains generally in the manner of wearing them; it is a sign and signal separating the chaff social from the wheat of super wealth and station, the democratic hand all ablaze from the refined patrician fingers on which third and fourth digit alone are the rings worn. But the very conspicuousness of these rings, reaching an awkward sensation at the start, but soon to become easier from custom. Foreign portrait painters in our midst are paying much attention to the painting of hands. Especially flattering are the results of those belonging to their women sitters. One and all are invested with the patrician type of tapering fingers and a slender, graceful beauty of expression. Vandyke's beauties of the English Court were not more favored to their lasting pride and glory, nor were their ring jewels painted with more minutiae. This to some tastes, is monotonous and characterless; to others it means everything desirable. The modish dressing of the third and fourth fingers with costly rings is rigidly carried out upon every canvas where hands are shown in connection with a full-dress portrait. This has the advantage of establishing the mode of wearing finger rings in the twentieth century, and to the future searcher after bygone customs, dress and manners, these portraits will establish a value not premeditated.—Vogue.

Domestic Hints.

COTTAGE PUDDING. Take one tablespoonful of butter, one cup of sugar, one cup of milk, two eggs, one large teaspoonful of baking powder and 1 cup of flour; beat butter, sugar and yolks of eggs together until light, add the milk and then the flour, beat well, beat whites to a stiff froth, and stir them carefully into the pudding, add baking powder and mix well. Pour into a greased cake pan. Bake three-quarters of an hour, serve hot with lemon sauce. For the lemon sauce use one-half tablespoonful of butter, one-half cup of sugar, two cups of hot water, a pinch of cinnamon, and about the same of grated orange peel, one-half juice and a little rind, and one tablespoonful of flour.

FIVE O'CLOCK TEA CAKES. Beat four eggs very light, whites and yolks together; add two cups of brown sugar, four bars of grated chocolate, one teaspoonful of cinnamon, one salt, the juice and grated rind of one lemon, two cups of chopped almonds; mix thoroughly, add two cups of sifted flour to two level teaspoonfuls of good baking powder; drop in tablespoonfuls on buttered pans; press a whole blanched almond in the centre of each cake; bake in a slow oven until the cakes are crisp, about one hour; these cakes are delicious when served with brandied peaches or sliced oranges for luncheon or dessert.

ORANGE OMELET. Beat yolks three eggs till creamy, add three teaspoonfuls powdered sugar, a few grains salt, three tablespoonfuls milk; mix more expensively for the average woman, for a white waist must be

cooked in hot buttered omelet pan slowly till well risen and light brown underneath, then dry off the top in the oven. Fold, turn, cut, sprinkle thickly with powdered sugar, and score it with red hot poker.

FRUIT APPLES. Slice the apples with a sharp knife. Prepare the frying pan by heating it and putting in equal parts of lard and beef drippings. Put the apples in the pan, sprinkle with brown sugar, and when nearly done turn and brown thoroughly.

BAKED BUTTER SAUCE. Two tablespoonfuls of butter, one-half cup of butter, one pint boiling water, one-half cup of spoonful of salt. Mix the butter and flour together until light and creamy, and gradually add the boiling water, stirring constantly. Place the bowl in a saucepan containing boiling water, and give up altogether, and many good patterns in light gray are seen among the summer silks and muslins. The very palest shades of pearl and silver gray are the most fashionable. The stone grays, or the grays with any tinge of blue, will be quite the order of the season, and for this very reason the woman in the land ought to rejoice for one woman out of a hundred looks well in a stone gray gown. There are more shades of blue than usual to choose from, and pale straw color and yellow are everywhere.

CRANBERRY DUMPLINGS. Take one quart of flour, one teaspoon salt, two heaping teaspoonfuls baking powder, sift all together; rub in a piece of butter the size of an egg, milk enough to make a soft dough; roll out about one-quarter of an inch thick, cut into squares, four by four, in each square put two tablespoonfuls of cranberries and one tablespoonful sugar, wet the edges of the square and pinch together. Bake in a quick oven twenty to thirty minutes. Take some cranberries and make sauce, and put a tablespoonful on the top of each dumpling when ready to serve.

Hints to Housekeepers. Naphtha is recommended by a woman who has tried it as a satisfactory cleanser of light fur. The naphtha was poured over the fur and the box stuffed and patted until the box was worked out. The fur was then brushed with a duster, and the hand firmly over it, the box shaken and hung in the air to dry.

Scraps of plain or puff paste trimmed from patties or pies may be sprinkled with grated cheese and made into cheese straws.

The cold boiled rice left from dinner or luncheon may be mixed with waffles or muffins, and will make them lighter.

Leather can be cleaned with turpentine applied with a soft cloth. This removes the stains but slightly stiffens the leather, which must be made pliable again by rubbing briskly with crude oil. Use a very little oil and go over the piece with one of the clean cloths upon which no soap has been put, as care must be taken to get all the surface grease off to prevent soiling the clothes.

A delicious cake filling is made from chopped figs mixed with crabapple or apple jelly.

A novel plan for protecting a dainty silk or lawn shirtwaist is suggested in an underwaist of very thin fine lawn, made with bishop sleeves gathered into cuffs of lace or embroidery, a small round yoke also of lace or embroidery, and a transparent choker. This can be laundered; and the outside waist is made more dressy by cutting it out to meet the decollete yoke or the underwaist.

A good cement for china and glassware is made by soaking linseed in water overnight, then discarding the water and adding a little lard. It is used in proof spirit and adds a little stain. Pickles should not be made in vessels of earthenware and the very best of earthenware and white wine vinegar. The jars should be of stone or glass, and the pickles kept in a cool, dark place, and examined at intervals. If white sauce is used, their appearance in the vinegar draw it off, add and add two tablespoonfuls of sugar and a few cloves. All vinegar should be sealed before using with pickles, otherwise it will not keep well.

When fish is rather deficient in flavor a little vinegar rubbed over the skin and a few sweet herbs boiled with it will greatly improve it. For boiling large fish should be placed on the fire in cold water and small ones in hot water. Both are done when the fins pull out easily. Fish soup is the most economical of all fish dishes, baked fish is the best, broiled fish retains its flavor, and the outside waist is made more dressy by cutting it out to meet the decollete yoke or the underwaist.

The following technical terms are used to denote different methods of cooking fish: To dress fish a la Hollandaise is to boil it in sea water; a court bouillon with cold water, white wine or brandy, moistened with a noted dressing, and white spices; a la d'oeil is salt and water; a la bonne eau with sweet herbs and cold water; au bleu in equal quantities of red wine and cold water, highly flavored with spices and aromatic herbs.

Fashion Notes. Bands of embroidered velvet, cloth, silk or satin are used to edge bodices, waiving jackets, and other frocked and pressed dresses. These bands are in nun's velvet, cashmere, foulard silk, French batiste, organdie, linen lawn, etc., will be seen on summer gowns; the bands being cut from the edges of the plain fabrics, which they border. Gold and silver design finish some of the more expensive weaves in silk and wool, the metal borders being notably effective on French chas, veiling or similar goods in pale old rose, Chartreuse green, amethyst and black, and the shades of the plain fabrics, and trimmings are those of lace with a plect edge, dotted with gold or jet beads, the designs outlined with gold or fine chenille threads.

The latest Parisian fancy is a black stock of mouseline de soie, decorated with slanting lines of Roman pearls and fastened at the neck with a fluffy butterfly bow. This is worn with evening dress, and is regarded as tremendously chic.

The most charming dotted swisses are now shown in all the shops. They come in pastel gray with white lozenge-shaped dots, in bonbon green with white dots, and in various other colors, the yellow with black dots stripes that look like insertion, in violet, black and white, coral, and a variety of lovely shades and tasteful designs.

The princess skirt shaped with a corselet top is one of the popular styles of the season. It is a graceful model issued from a noted designing house of this city is fitted to the form by means of curved front seams and two darts on each side. Suspender loops up over the shoulders from the top of the corselet, disappearing beneath the skirt, and the open fronts are shaped with pointed ends and fitted by extra-deep single darts.

A revival of a pretty fashion is the black velvet ribbon bracelet, which is being worn now by Parisian women. It is simply finished, and held together by a dull gold silk, sometimes jewelled with Egyptian amulets, or, as popular, although their chief beauty seems to lie in their barbaric effects.

Youthful black evening gowns are in great demand this season, all because young women find that they can acquire more distinction in a black gown than in any other. Something pretty is a black point d'esprit made over white tulle, silk and trimmed with wreaths of tiny pink roses. Gold braids made into something which resembles a rose is another form of trimming for this style of gown, and for the decollete bodice there is a narrow yoke and belt of the gold cloth embroidered with blue silk and turquoises.

New handkerchiefs for both women and men are delicately lined in color plaids, and some of the newest are of linen, with silk linings. Others, again, have corded effects in the borders. There are special bargains in fine linen handkerchiefs, with hems of solid color and corner linings embroidered in the same color as the hem. These are to be had at twenty-five cents each, and are especially suitable to carry with wash gowns for summer wear.

The variety in embroidered silk hosiery is beyond detailed description, but one of the special novelties shows an eagle embroidered in yellow silk, while another is dotted over the front with single violets.

The prettiest things imaginable to be found now for waist materials are the Japanese corded silks. The cords in these have been growing heavier and heavier, and the silks now have come to have a great advantage over the other styles when made up, and particularly after laundering, that they would not have otherwise. Silks in white with the cords in plaids are particularly attractive, for they are serviceable as well as pretty. Nothing is more satisfactory than a Japanese corded silk waist, and nothing is more expensive for the average woman, for a white waist must be

immaculate to be decent, and it is almost impossible to keep it so. The Japanese silks will wash. The silks in the colors are very beautiful. The prettiest are in stripes, in two shades usually of the same color, separated by cords of white. The colors are so combined and have such a sheen in the silk that they have the appearance of panther velvet. There is in most of the colors a decided contrast, a pink, for instance, being combined with a cerise, and a light blue with a decidedly dark stripe, and a pale green with a peculiar dark sage green. In some of the silks a few black cords are combined with the white with excellent effect, and dark as well as bright shades are combined. The silks are forty-five cents a yard, and it will take four yards to make a waist.

Gray will not be so fashionable as the wood colors this year, but it is altogether too becoming to be given up altogether, and many good patterns in light gray are seen among the summer silks and muslins. The very palest shades of pearl and silver gray are the most fashionable. The stone grays, or the grays with any tinge of blue, will be quite the order of the season, and for this very reason the woman in the land ought to rejoice for one woman out of a hundred looks well in a stone gray gown. There are more shades of blue than usual to choose from, and pale straw color and yellow are everywhere.

The World Beautiful.

Here in the earth life we have it in our power to seize our future destination.—Fichte.

My soul is falling through the sea. But the Past is heavy and hindereth me. The Past hath crusted cumbrous shells That hold the flesh of cold sea-mells.

About my soul, The huge waves wash, the high waves roll, Each barnacle clung and worketh dull, And hindereth me from sailing!

Old Past, let go and drop! let the sea Till fashionless waters cover thee! For I am living, but thou art dead! Thou dravest back, I strive ahead! The day to find, Thy shells unloose! Night comes behind, I needs must hurry with the wind And trim me best for sailing.

—Sidney Lanier.

The Past is heavy and hindereth every one. Its "cumbrous shells" cling like dead weights around man, and keep him from the larger, freer life. "Man is not by any means convinced as yet of his immortality," says Sir Edwin Arnold; "all the great religions have in common the desire to keep a fly alighted on him; but no sane logic can, and no entirely accepted voice from some far-off world proclaims it."

The one proof, of course, so far as absolute evidential demonstration goes, lies in the communication from those who have passed through death. There unfolds an increasingly impressive mass of logical probabilities that point to but one conclusion to every student of science and of spiritual laws. Biology offers its important testimony. The law of the conservation of forces,—of motion and matter,—which is definitely proved by actual demonstration, suggests with a potency which no one can evade that intellect, emotion and will—the most intense and restless forces of the universe—can hardly be extinguished when the forces of matter persist. The study of the nature of ether alone pours a flood of illumination on the theory of an ethereal world,—a theory to which all the known facts of science and psychology fit themselves, and with which they range themselves. The Rev. Dr. Newman Smyth says that the facts disclosed by a study of Biology, as well as the theories advanced by some trained biologists, fairly open the new and interesting question whether death itself does not fall naturally under some principle of selection and law of utility for life. "It is of religious concern as well as of scientific interest," he continues, "for us to learn so far as possible the facts and suggestions which microscopic researches may bring to our knowledge concerning the minute processes of our most intimate and hidden laws of life and death. For if we, children of an age of questioning and change, are to keep a rational faith in spiritual reality,—strong and genuine as was our fathers' faith according to their light, ours must be a faith that shall strike its roots deep down into all knowledge, although light from above alone may bring it to its perfect Christian trust and sweetness. The least facts of nature may be germinal with high spiritual significance and beauty."

The Twentieth Century leads faith to the brink of knowledge. The deepest spiritual feeling must perpetually recognize that faith alone—Christ's words alone—are enough for every human soul; but faith grows not less, but more, when inspired by knowledge. When man measures and weighs the stars, and discovers their composition; when he sends messages two hundred miles through the air without visible means, then he may believe with Fichte, that "Here, in the earth life, we have it in our power to seize our future destination." Dr. Weiss objected to any (possible) evidential demonstration of immortality, because, (as he said), "If you owe your belief in immortality to the assumed facts of a spiritual intercourse, your belief is at the mercy of your assumption." It is merely an opinion derived from phenomena, and this opinion, reasoning would not hold good regarding another trend of knowledge; the vital necessity of the soul to lay hold on God and immortality is not lessened, but rather deepened and reinforced by understanding, when knowledge goes hand in hand with faith. And the one supreme argument of all is that a truer knowledge of man's spiritual being—now and here—with a truer conception of his destiny in the part of eternal life, would make a difference in his relations on earth; in all his conceptions of achievement; and would, as Sir Edwin Arnold says, "turn nine-tenths of the sorrows of earth into glorious joys and abolish quite as large a proportion of the faults and vices of mankind as the degree of reality and significance depends wholly on ourselves; which is simply the achievement—better or poorer—which man creates now and here, in the same manner in which the quality of manhood and womanhood depends wholly on the degree of achievement in childhood and youth. We do not 'find' but instead make life.

The Brunswick, Boston.

Gems of Thought.

...To be vulgar is to do that which is not the best of its kind. It is to do poor things in poor ways, and to be satisfied with that.—David Starr Jordan.

There is no sense in always telegraphing to heaven for God to send a cargo of blessing, unless we are at the wharf to unload the vessel when it comes.—F. B. Meyer.

Be patient with every one, but above all with yourself. I mean do not be disturbed because of your impatience; and always rise up bravely from a fall.—Francis de Sales.

Learning is a good thing, but it is better to learn a few useful things well than to have a smattering of much, but to no profit. If we try to know too large a field, the weeds will overtake us before we can sow for the harvest.

...Eternal self-communion is our destiny. Shall it be communion with selves that we must abhor or despise, or with selves into which we can look with gratitude and gladness?—A. P. Peabody.

If ever you get light it will be in this way: Christ must be a great light to you. Nobody ever found light by basking in his own inward darkness, that is, indeed, seeking the living among the dead.—C. H. Spurgeon.

...Christianity is a help in business, God issues a bond: "Seek ye first the kingdom of God and his righteousness, and all these things shall be added unto you." When we fulfill the requirements, when we meet the conditions, we may be certain that God will pay the bond.

...Unkind words may be forgiven, but long years go by and they are not forgotten. We who spoke and they who heard may desire to have them drop out of remembrance, but they come back to thought again in spite of us and hinder love. How brief the gratification of their utterance! How indelible their record in the heart!

...Too many ministers seem content to go on in the old rut, preaching mostly to women and girls, and confining their pastoral work mainly to visiting from house to house. The minister who is not greatly interested in winning to Christ those of his own sex will not be likely to attract men and

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boys. If he is greatly interested in getting a strong hold on men and boys, he will take pains to do it.—J. C. Sawyer, D. D.

...The power to love is one of the greatest gifts to humanity. It generates the sunshine of the moral universe, without which life would be a desert waste. Use this divine power to be content. Be prodigal of your love. Let it radiate freely. It will brighten the dark places. It will gladden the sorrowing. It will lift you above the petty, grudging cares that so soon corrode the mind and sap the energies of the soul. It is the golden key that will admit you to the palace of true life.—Stevens.

Historical.

—Patrick Henry, in March, 1775, delivered a speech in the Virginia convention in favor of a resolution "that the colony be immediately put in a state of defence." In concluding his address, the impassioned son of Hanover County said: "Is life so dear, or peace so sweet as to be chased at the price of chains and slavery? Forbid it, Almighty God! I know not what course others may take, but as for me give me liberty, or give me death."

In 1729 a fire in Constantinople destroyed twelve thousand houses and seven thousand people perished. The same city suffered a conflagration in 1745, lasting five days; and in 1760 a series of three appalling fires—one in January, consuming ten thousand houses; another in April, destroying property to the value of \$5,000,000, according to one historian, and according to another, \$15,000,000; and in the latter part of the year, another, sweeping fully ten thousand houses more out of existence. It seemed as if Constantinople were doomed to utter annihilation.

Castle Garden, New York city, is a historic spot. It was originally a fort, and afterward was transformed into a summer garden, and in that way derived the name it now bears

Poetry.

HOW LITTLE IT COSTS.

How little it costs, if we give it all thought,
To make happy some heart each day;
Just one kind word or a tender smile,
As we go on our daily way;
Perchance a look will suffice to clear
The cloud from a neighbor's face,
And the press of a hand in sympathy
A sorrowful tear efface.

One walks in sunlight; another goes
All weary in the shade;
One trods a path that is fair and smooth,
Another must pray for aid.
It costs so little! I wonder why
We give it so little thought;
A smile-kind word—a glance—a touch!
What magic with them is wrought.

—From Open Window.

THE NEW ENGLAND DAUGHTER.

Spent at the post of service
I'll from out her guarding hands
The last trusted dear one,
The New England daughter stands.
Ask not who will teach her courage
Or the gathering shades dispel;
Ask not who her age will lighten?
She has there her duty well.

She has there, where rising fortunes
The newer West shine fair;
They have left the father, mother,
To the daughter's tender care.
Love has passed her by unburdened,
And she has her voice raised;
But the old home voices call her
With a summons ne'er denied.

When the final tasks are ended,
There may be a place for her,
At the still New England homesteads
That one lonely life inter!
She will tend her flowers in summer;
And when winter days are drear,
In the north wind she will hear
Gently voices she will hear.

Up and down the quiet valleys,
On the hillside, by the sea,
Nodding 'neath the village shade-trees,
Wait these homes for you and me.
We can see them as we journey,
In the darkness gleams their light;
And we know of life's triumph
As we fare on through the night.

—Christian Register.

EN VOYAGE.

Whichever way the wind doth blow,
Some heart is glad to have it so;
Then blow it east or blow it west,
The wind that blows, that wind is best.

My little craft sails not alone;
A thousand fleets sail on every zone
Are out upon a thousand seas;
What blows for one a favoring breeze
Might dash another with the shock
Of doom upon some hidden rock.

And so I do not dare to pray
For winds to wait on my way,
But leave it to a higher will
To stay or speed me, trusting still
That all is well, and sure that he
Who launched my bark will sail with me,
Through storm and calm, and will not fail,
Whatever breezes may prevail.

To land me, every peril past,
Within his sheltering heaven at last.

Then, whatsoever wind doth blow,
My heart is glad to have it so;
And blow it east or blow it west,
The wind that blows, that wind is best.

—Mrs. Caroline A. Mason.

SNOW-BIRDS.

On twinkling wings they eddy past,
At home amid the drifting,
Or seek the hills and wending fields
Where fast the snow is drifting.

Their coats are dappled white and brown
Like fields in winter weather,
But on the azure sky they float
Like snowflakes knit together.

I've heard them on the spotless hills
Where fox and bound were playing,
And with I stood with eager ear
Rent on the distant baying.

The unknown fields are their preserves,
Where weeds and grass are seeding;
They know the lure of distant stacks
Where houseless herds are feeding.

O cheery bird of winter cold,
I bless thy every feather;
Thy voice brings back boyhood days
When we were gay together.

—The Century.

Man's a little chunk of ice—
Woman is the sun—she lets
Herself beam on him—ah, how nice
And soft he gets—

—Chicago Times-Herald.

Who says I cannot meet my bills?
Of bills that's the worst!
Why, sirs, I meet them every day,
Unless I see them first.

—Philadelphia Press.

He said to her no foolish words
That he would find recall;
For she, in truth, talked on so fast
He got no chance at all.

—Chicago Record.

Time has no flight—"It is we who speed along;
The days and nights are but the same as when
The dawn awoke with the first rush of song,
And felt the swiftly passing feet of men."

—T. S. Collier.

When a wife asks a husband blunt questions,
Of course he'll respond as he can, sir;
But I make one suggestion;
Don't answer her questions
For she's likely to question the answer.

—Judge.

He wrote a quatrain on her eyebrow,
A sonnet on her throat,
And her father put a footprint
On the fag-end of his coat.

—Chicago Times-Herald.

Yield thy poor best, and must n't how or why,
Lest one day, seeing all about thee spread
A mighty crowd, and marvelously fed,
Thy heart break out into a bitter cry.

Thy heart be furnished, I, yea, even I,
The two small fishes and the barley bread."—

Frederick Langbridge.

Who scatters tares shall reap no wheat,
But ho hungry while others eat.
Who sows the wind shall not reap grain,
The sown wind whirls while others reign.

—Christina G. Rossetti.

Somebody did a golden deed;
Somebody proved a friend in need;
Somebody sang a beautiful song;
Somebody smiled the whole day long.

Somebody thought, "Tis sweet to live";
Somebody said, "I'm glad to give";
Somebody fought a valiant fight;
Somebody lived to shield the right.

Was that somebody you? —Selected.

Sacred interpreter of human thought,
How low respect or use thee as they ought!
But shall give account of every wrong
Who dare dishonor or defile the tongue.

—Cowper.

None could tell me where my soul might be,
I searched for God, but God eluded me,
I sought my brother out, and found all three,
—Ernest Crosby.

The tender thoughts we nurture for a loss
Of brother, friend, or child, oh! it were well
To spend this glory on the earnest eyes,
The longing heart, that feels life's present cross.

—Rose Hawthorne Lathrop.

Miscellaneous.

"The Black Domino."

Midnight clangs from the brazen throats of
the city bells, from stately steeples and gray church
towered belfries, close guarded from the wintry
weather, two girls sit in the deepening gloom of
the night, exchanging confidences, secrets pro-
found, such as come forth at that witching time,
like owls that shun the light.

"And so, Alma, the coquette has a heart after
all; the marble Galatea has some life at the
call of the gods. I prophesied it long ago, you
remember."

"Don't, Stella," protested the girl, crouched on
a tiger rug at her friend's feet in an attitude of
graceful abandon, while the freighting played fit-
tily over her delicate blonde loveliness. "What
did I know of love in those careless days of con-
fiding I laughed it to scorn; a giddy young
thing let loose on a world of fashion and frivolity."

"Poor Lester, could he see this transformation,
he would deem himself well avenged."
The beauty sighed, and clasped two lovely arms
above her head, while the streaming tresses
gleamed like spun gold in the wavering light.
"Dear, do not speak of that episode now; I be-
lieve that love has awakened a conscience in me,
and in time will exact penance for my many sins.
True, I did not care for him, poor boy, but he was
too true and honest for idle trifling; to be played
with for a season, and then flung aside like an old
glove. I remember little Madge worked herself
into a fury of passion at the time; he was her
favorite, and when I sent him away she could not
be brought to forgive me for many a day."

"But about this strange romance, dear, this
mysterious unknown lover. I do not quite un-
derstand. That you, the cold, the conventional,
could be led into such an affair, puzzles me I con-
fess."

"Stella, I hardly know myself in these days. I
feel in the grasp of something strong and over-
powering. It must be fate. It has been going on
for many months now, solely through correspond-
ence, you know. Such letters, my dear, poems
of passion; I am no romanticist, but those letters
would touch a heart of stone, fire a glacier, tempt
a virgin, I believe. We have exchanged senti-
mental pictures."

"What Alma, you?"
"Yes—even to that folly have I stooped, I
blush to say it. But let this plead for me," and
rushing hastily she took a photograph from her
mantel, and placed it in her friend's hand.

It was indeed a face to excite infatuation, in a
foolish maid, to fire the imagination, stir the
heart, strong, resolute and manly, yet darkly pic-
turesque as Romeo in his youth.

"My dear child," protested Stella, laughing,
"take him away. I am already betrothed and in
love, yet I could not answer for myself if I looked
long upon him."

"And now after this strange wooing we are to
meet at last. Tomorrow night at the grand Ball
Masque where all the gay world will be present."
At a masked ball; then the mystery will be
preserved to the last. By what sign or token will
you know him?"

"He will seek me out in the crowd; he has
written, and signed himself 'The Black Domino.'"

"Alma, this is a strange chapter of romance
you are telling me; one would think we had been
transported back to the earlier centuries; the
days of troubadours, and gallant cavaliers. Have
a care, or you will be spirited away against your
will, here in prosaic modern Gotham. What a
column it would make for the papers."

At that moment the door burst open without
warning, and a tall girl with fourteen bounces
into their midst; a girl with glorious great eyes,
and black elf locks fluttering over her white
wrapper. "Oh, girls," she cried without preface.
"Do get me an invitation to this masquerade; I'm
dying for a sight of it; and mother won't hear a
word."

"Madge," said her sister, severely. "Go to
bed this instant, and put such wild notions out of
your head; when you are fairly out it will be time
to talk."

"Hateful thing," pouted the gypsy sanely.
"Some day I'll be even with you for this. Be-
ware, and with a tragic gesture, she flashed from
the room impetuously as she had come."

So that was Madge, fresh from boarding
school.
"Yes, madcap Madge, I call her; the torment
of my existence."

"Alma," oracularly; "some day that boy will
dispute sovereignty with us all. With her
godlike height, gypsy beauty and great dark eyes,
there's no knowing what may happen."

Alma yawned carelessly. "Well, Stella, let's
get to bed; tomorrow night comes the masque-
rade."

The ball masquerade was the event of the season in
fashionable circles, for the elite were
admitted within the sacred precincts, and invitations
were not to be had for the asking. It was a theme
for idle tongue and pen, many a month in the gay
metropolis, where throughout the winter one
pleasure succeeded another with kaleidoscopic
rapidity.

A pageant of color and splendid movement, of
courtly knight and stately dame, princess,
peasant and clown, a "dream of fair women," a
reminiscent of earlier centuries, in scenes and
climes more picturesque than these days of modern
Gotham. Alma Douglas as a French marquise of
the old regime was a vision of surpassing loveliness,
with her high powdered hair, rich costume,
patrician grace and elegance, and seemed to have
stepped from the frame of some old master, so
fair a representation was she of the famed French
beauties of those days.

Yet for once in her gay life this Arabian
Nights scene of enchantment served but as the
background for a drama that was shortly to be
acted; for once the heart of the spoiled beauty
beat fast under her jeweled bodice, as through the
bright moving maze of figures she looked for the
coming of one whose presence was to make her
happiness.

It had not been so in the old days, when she
held her little court, haughty and invincible, un-
touched by a trace of tenderness or emotion,
scornful of its display in others. But now, like a
foolish virgin, she has yielded all to the touch of a
strange hand; pales and trembles, like the weak-
est of her sisters, before a passion beyond her
own fathoming, that stirs strange hopes and long-
ings in her awakened heart.

The evening was well advanced and the dan-
cing at its height, when a tall black domino sought
her out, and with a courtly bow claimed her for
the coming waltz. She could not doubt his iden-
tity, deny his right, and as they swung out into
the motley maze of dancers, to the inspiring
strains of the Hungarian Band, she leaned upon
his strong arm and yielded to his guidance.

Heard heart beat high with eager anticipation, and
he dared not meet the full flashing glance of the
dark eyes that sought her own.

Speech was not needed at the moment; it would
have seemed but a rude awakening to the dream
in which she lived, moved, and had her being;
the rich, intoxicating music to which the pulses
beat in second served as an interpreter between
them, heightened their mood of exaltation.

Many turned to look upon the young couple
with eager curiosity, the stately black domino
and daintily-clad French Marquise, as they swung
and swayed in the changing dance, the incarna-
tion of supple grace and poetry.

At last he led her away from the brilliant ball-
room to the dim-lighted conservatory, where stray
couples, or young lovers, paced up and down
under the stately palms, and inhaled the volup-
tuous incense of rare flowers, blooming with all
the luxuriance of tropic climes.

He sought a secluded corner in his green re-
cesses, and as she sank down upon a rustic seat,
removed the light mask and turned upon him her
marvelous face, alight with a new radiance, small
murmured that the man caught his breath for a
moment and stood speechless before her. "Ah! if you
but knew what this moment means to me, the
happiness you have given me this night. That you,
in your radiant youth, should stoop to love
like mine; lean from your lofty station to the poor
suppliant at your feet. It seems scarce credible."

"You speak in enigmas, sir," she said gently.
"If your station be indeed so lowly, I marvel how
you obtained entrance here tonight."

"A mystery of the masquerade, dear one, which
you must not seek to fathom. Love finds a way
and laughs at bolts and bars. I fear nothing save
the light in those blue eyes, the words that fall
like music from those rosy lips. Dare I believe in
your presence the written vows that have bright-

ened my solitude so many weary months? I
express to you the hopes I have cherished, the
dreams I have nursed, of this hour so long in
coming."

"You dare many things, it seems; you are not
lacking in courage or enterprise. I am here at
your bidding, this should content you." She
spoke with a calm composure that belied her
fluttering heart, and the rare color that came and
went in her dimpled cheek; she would not sur-
render all in the first moment, to this imperious
stranger, who had so taken her heart by storm.

"The moment for revelation has come; a trace
to mystery, sir, I would see the face of the man
who has dared so strange a wooing in these pro-
saic times."

"And must I risk the happiness of this mo-
ment?" he muttered, while his dark eyes glowed
strangely through the enshrouding mask.

"Does your love then dread the light of day—
possible disclosure? Thank you, I am not won-
dered by your reticence; I am not won by your
trickery; unmask—I exact it as my due!"

She spoke hurriedly, a sudden tremor seized her
in the presence of the silent masked stranger;
the voices of the dancers had died away, and they
were alone in the great flower-decked conservatory.
The wild strains of the Hungarian Czardas
came to their softened by distance.

For all answer the man fell at her feet, caught
her hands to his lips, and kissed them wildly,
passionately. A moment more and he had gone,
passed from her life forever, and may be; but she
clung to the domino, it slipped from his shoulders
and fell to the ground, and freed from all disguise,
a young cavalier in the picturesque costume of a
sixteenth century stood revealed to her eager
glance.

She gave one glance of bewilderment at the
spirited face and flashing eyes of her lover, and
springing to her feet with a startled cry caught
him by the shoulders.

"Madge, you wretch. What mad escapade is
this?"

"The black domino is not a bad disguise, eh,
Alma?" was the saucy response. "Under cover
of the mask the wildest romance becomes possi-
ble. At school you always elected me to play
the lovers, so I'm not quite a novice in the role."
This exceeded even her expectations. It was as
good as a play. And the graceful girl, as hand-
some a young blade as one would wish to see,
seated herself astride a chair and burst into un-
controllable laughter.

"Madge," shortly; "explain yourself this
moment. How come you here in this disguise?
What know you of the black domino? Speak,
speak," and she struck her sharply across the
cheek with her jeweled fan.

"My dear little sister, calm your anger and
listen to me. I see that you do not quite com-
prehend the situation. You are not even con-
vinced with the lover presented to your view, and yet,
my honor, he's not so bad a fellow."

"My lover?" disdainedly.
"The only lover you can claim, Alma, since you
sent poor Lester into exile, to folly, this little
masquerade is directly due."

"What do you mean, Madge?"
"Sister, speaking truly, I have played the
lover for the past six months, and you, my sister,
deep in love to boot, through certain impassioned
epistles entrusted to the mail."

"You confess it?"
"More, I glory in it; but I must be modest. I
had a companion in iniquity, my school chum, who
helped me out with her literary gifts; and during
study hours we planned the whole conspiracy
then I eluded her as a forger at handwriting."

"Go on," commanded Alma, with the calmness
of mounting anger; "with shame, bewilderment
and fury struggled for the mastery, as the deep-
laid scheme was revealed to her view."

"Well, Alma," continued the infuriated girl.
"There is no lover, there is no romance, it is all
a chimera, a fantasy, a delusion of the senses.
Those letters, so tenderly cherished, so promptly
answered, are now valueless as so much waste
paper; the photograph of the handsome man I
picked up somewhere. Now do you understand?"

"Miserable, shameless girl," cried Alma, find-
ing voice at last, and you feel no regret for
this vile conspiracy, this bare-brained escapade?
Laugh while you may, for when I tell your story
at home you may find that the way of the trans-
gressor is hard."

"Alma," retorted the young sinner with cool
offensiveness. "Has it never occurred to you, my
sister, in giving me up to justice you also expose
your own follies? The worst they can do is to pack
me off to a convent, like a child punished for some
misdemeanor. But how will it sound to the world
when it becomes known that Alma Douglas, that
haughty belle and beauty, has been tricked into
so foolish an entanglement through love of romance?"

For once the spoiled beauty had found her
match, was fairly reckoned with by her sister,
little sister, a child of a schoolgirl, whose ears she
would gladly have boxed, yet whose audacity de-
fied all discipline.

She leaned her head on her arms and gave way
to tears, tears of shame, disillusion, anger, and
grief. At this unlooked-for humile to years-
over, the saucy girl softened and took
step nearer; then as voices approached hurried
on mask and domino, and held out his arm saying,
"May I have the honor of this dance, madam?"
and led her away before she realized what had
happened.

—JULIA M. KNIGHT.
Roxbury, Mass.

Douth's Department.
I'll be the thistle down, you be the wind;
You fit where you please and I'll follow behind.
You be the snowflake and I'll be the sun;
So that when I peep out you must get up and
run.

You be the birdie and I'll be the nest;
You can fly to my arms if you want any rest.
I'll be the oak tree that grows in the glade,
And you be the flower that blooms in the shade.

There are so many games that 'tis pleasant to
try.
But I'm glad, after all, we are just you and I!
—A. H. B.

The Gray Squirrel.
If you wish to witness the most marvelous
exhibition of agility to be seen in the New England
woods, I would suggest that you go out and watch
a gray squirrel making his way through the tree
tops. Often as I have observed this performance,
I never see it without a feeling of intense admi-
ration and astonishment.

In places where these squirrels are protected,
as in Central Park, New York, where they are
fed from your hand, and Fall River, Mass.,
where, on one of the principal streets, I have had
them jump into my cap, they get rather lazy and
very leisurely in their movements; but a wild
gray squirrel, in his native woods, can take
about as many liberties with the laws of gravita-
tion as anything which goes on four legs. He al-
ways looks much more at home in the trees than
he does on the ground, and he can dodge around
the big branches fast enough to make one's head
swim.

Perhaps he never does this trick quite so fast
as when a hawk is after him. Then he is dodging
for his life, and could give the nimblest school-
boy cards and shades at "tag," "puss in the cor-
ner," "pull away" and "prisoner's base," all
rolled into one and beat him out easily.

The hawk makes a dash from one side of the tree,
barely grazing the tip of the silver-gray tail, as
the squirrel whisks around the trunk, to meet the
swooping bird again a moment later as the latter
descends from another point of the compass.

The squirrel runs and leaps with a swiftness
and agility that is almost incredible. He strikes
the hawk "savagely," scraping off the loose
hair from the spot where Silvery Tail stood but
an instant before.

Usually the game is pretty even, with the
odds slightly in favor of the squirrel, and more
often than not the hawk is obliged to retire
hungry from the scene. That is when he hunts
alone, but if he is an old hawk and has "been
there before" he generally brings his wife with
him, and then it is only a question which of the
two gets the quarry first. Scared and bewildered,
and around and around the tree the squirrel scurries,
with a hawk dashing first from one side and
then another, until the talons of one of the birds
crash through his ribs, and he is carried off limp
and bleeding to be torn to pieces and squabbled
for by his murderers.

But it is when he is traveling rapidly through
the woods that he excites our greatest admira-
tion. He has regular pathways through the tree-

tops, and he knows them as well as we know our
own garden paths. You will seldom see him run
out upon a branch from which he cannot make
good connections with another tree, though to
make sure connections he may have to leap many
feet from one bending branch to another. As he
leaps his big, bushy tail is stretched out straight
behind, as though to steady him, and possibly to a
certain extent to act as a rudder.

Does the normal color of the animal is
silver gray, gray squirrels are not by any means
always gray. One variety, found chiefly in Canada,
northern New York and the West, is black, and
there are others showing every gradation of color
between the silver and the normal gray. Sometimes
black young are found in the same nest with gray
ones.

This is by far the largest squirrel in New Eng-
land, and a big male will measure over twenty-six
inches from the tip of his nose to the end of his
tail. He is of a very energetic disposition,
rising with the sun, and seldom retiring for the
night until long after sunset. He usually devotes
several hours in the morning to hunting for food,
about the middle of the day he and his wife retire
for a nap, to a nest of sticks, leaves and moss,
which they have built in the top of some big tree.
In the afternoon they come out again to feed and
to play until it is time to go to bed.

In the late fall they retire to a nest either built
in the branches of a tree or in a hollow trunk,
where they sleep away the coldest part of the
winter. They do not lay by for themselves any
store of food worth speaking of, but on mild days
they come forth and hunt for nuts among the
fallen leaves, and even try to reach those which
still cling to the leafless branches.

Besides the farmer and the hawk, the fox, the
weasel and the lynx all prey upon the gray
squirrel, but if the pot hunter would but leave
him alone, he is quite able to hold his own against
all other enemies.

Like the lemmings of Norway, gray squirrels
migrate at irregular periods, and their migrations
are probably in all cases owing to scarcity of food
in the country they see fit to leave. At such times
they gather in thousands, and their ranks are
swelled as they advance by the young of the
valleys, and rivers too. It is such happen to be
their line of march, and they cause fearful havoc
to the crops in the country they pass through.

Hordes of them have been known to cross the
St. Lawrence river, respectively, though in
such cases there were usually many of the little
animals drowned.

Having reached a land of plenty, they disperse
and make new homes, and thus a locality where
squirrels were almost unknown may become sud-
denly stocked with them.—Harford Times.

Curious Facts.

—A railway engine is equal in strength to nine
hundred horses.
—Seven species of wasps secrete and store up
honey just as do the bees.

The average height of the heavy rain cloud
is 1000 yards; of the delicate, fleecy cirrus, 9700
yards.

—The weight of the air which encloses the
earth is equal to that of 361,000 cubes of copper,
each 100 yards square.

If the world be divided into land and water
hemispheres, London is the centre of the land,
New Zealand of the water.

—European astronomers are now busy photo-
graphing the sky. There will be about 32,000
plates, giving the location of thirty million stars.

—The water boundaries of France are as fol-
lows: Mediterranean sea coast, 305 miles; North
sea, Straits of Dover and English Channel, 572
miles; Atlantic ocean, 584 miles.

—On one of the Indian reservations in New
York State is a toy factory which employs several
hundred Indians all the year around. The toys
manufactured here are being shipped all over the
world.

The Egyptian reed, which was used for
making the pens found in Egyptian tombs, is a
hard variety growing to about the diameter of an
ordinary goose quill. Pens made from it are said
to last for a day or two and do excellent work.

The London Lancet calls attention to the
fact that in England cannot tomatoes are now
being extensively colored, in order to make
them look attractive and as if made from ripe
fruit. Among the colors so employed are coal-tar
colors and cochineal. The subject of artificial
coloring of food is now receiving great
attention in England.

—Light travels from Jupiter's satellites at the
same rate as it does from our gas lamps. A few
years ago, says a London newspaper, a star sud-
denly came into sight, burst into first order bright-
ness, and then in five or six weeks died out of
sight. Difference of opinion existed between
spectroscopists like Huggins and Lockyer, as to
what it meant, but there was general agreement
that what we saw was something that happened
in the time of Queen Elizabeth, only that the light
had taken three hundred years to reach us. I
was the "latest news," in fact, from that part
of the heavens. The rate of transmission no one
questioned.

A mine, the product of which is timber, is
noteworthy. A mine of this sort is to be seen in
Tongking, China, where, in a formation of sand, at
a depth of from fourteen to twenty feet, a de-
posit of the stems of trees, which thousands of
years ago must have existed as an extensive
forest, but eventually became buried by an earth-
quake or other similar phenomenon, has been
opened, and is now being mined through gang-
ways. The timber in no way forms any kind of
coal, but is in good condition, a fact to be attrib-
uted to the large proportion of resin which it
contains, and to the sandy nature of the ground
in which it lies. The Chinese work the mine
methodically, and use the timber for sculptural
purposes, coffins, troughs, etc. The stems have
a diameter of three feet, are forty-five feet long,
and appear to be a kind of fir.

Notes and Queries.

**THE RHYMED HISTORY OF ENGLAND—"R.
W. H."**
First William the Norman, then William his son;
Henry, Stephen and Henry, then Richard and
John.

Next Henry the Third, Edwards One, Two and
Three.
Again after Richard, three Henries we see;
Two Edwards, third Richard, if rightly I guess,
Two Henries, sixth Edward, Queen Mary and
Bea.

Then Jamie the Scot, and Charles whom they
slew,
Again followed Cromwell another Charles, too.
Then James called the Second ascended the
throne.

Then William and Mary together came on;
Till Anne, Georges four, and fourth William all
past
God sent us Victoria, the youngest and last.

MOURNING IN LONDON.—"Lewiston Brown."
Fashions in London are confined chiefly to the
various grades and degrees of mourning which the
Queen's death has made necessary, and very few,
if any, other ideas in dress can be expected from
that quarter of the globe for some time. There is
more variety in mourning than ever before, per-
haps, since shades of purple are substituted in
many ways where all black has heretofore found
first place. Some of the imported mourning cos-
tumes show a combination of black and white,
with a little touch of purple, which is a charming
relief from the regulation mourning gown. Mour-
ning hats, are very light in effect, some of the
prettiest being made of black tulle. Mourning
dress is so general in England that even the little
children wear a black band on one arm, and with
the rare exceptions of white and violet, the
some, hue of society is universal.

Blue serge, black frieze, cloth and crepe de
chine are the favored black materials, the last
being especially suitable for evening
gowns. It is made up in princess style with frills
of mousseline de soie around the neck, and the
low-cut bodice is draped around the neck
with the mousseline in berth form, and shirred
evening coats are made of black panne lined with
white satin and white shirred chiffon on the in-
side of the high collar

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L. C. Hall, Lowell.
O. C. McCray, Monson.
W. A. Moore, Millington.
J. W. Watson, Moore's Corners.
Oscar Belden & Son, North Hatfield.
C. D. Holbrook Co., Palmer.

Howard & Morrow, Pittsfield.
C. E. Brown, Sunderland.
C. F. Paige & Co., Athol.
F. E. Mole, Adams.
W. A. Dunham, Ashley Falls.
E. S. Ellis, East Longmeadow.
J. A. Brewer, Great Barrington
C. F. Cole, Huntington.
George Nichols, Hubbardston.
E. A. Cowee, Hudson.

New Haven Notes.

H. E. Bridge, who has made arrangements to train and campaign a quartette of horses, has discovered that one of the number, *Sairy Gamp*, is in foal. She is a bay pacing mare with no record, sired by Jay Bird 4060. She is in foal to Allandorf (2:19½), a son of Onward and Alma Mater. Mr. Bridge contemplates training on the Bran-

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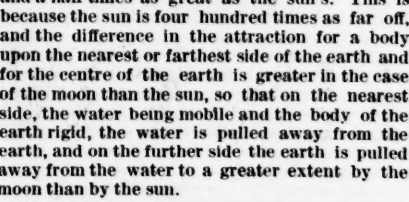
Send for descriptive circular.

THE LAWRENCE WILLIAMS CO., Cleveland, O.

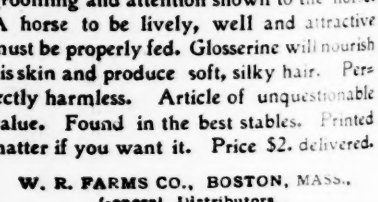


which is the inside of the track), and the track will measure exactly half a mile three feet from the inside fence, to be placed according to the width of the track desired. If not convenient to run the straight line, run the curve, it can be done as follows: Place stakes at the ends of the parallel straight lines at each end; take a wire from the top and, end, loose enough to turn on the stake, and measure upon this wire 226 feet 2-3 inches from the radius of the curve), which will be on the centre line of the track. At the ends of the straight lines; then describe a semi-circle beginning at the end of one line, putting down a stake every twelve feet, if this is the length of the fence panels desired. To lay out a full mile track select a level field of 100 rods square, and divide it into four equal parts. A straight line of 440 yards (a quarter of a mile), at each side of this line, and an exact distance of 140 yards two inches from it, draw parallel lines of equal length, so that the space between

Diagram illustrating the construction of a U-shaped cord. The diagram shows a U-shaped cord with an outer curve and an inner circle. A horizontal dashed line across the top of the U is labeled "200 feet 6 3/4 in.".



SEASON OF 1901 **EDGEWOOD**
PEDLAR
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Signature of Anniellie Pedlar, 2.18 1-2; Trader, 2.18 1-2;
Cash, p. 2.17 1-2; Ondray, p. 2.18 1-2.
\$50 with us
EDGEWOOD FARM, North



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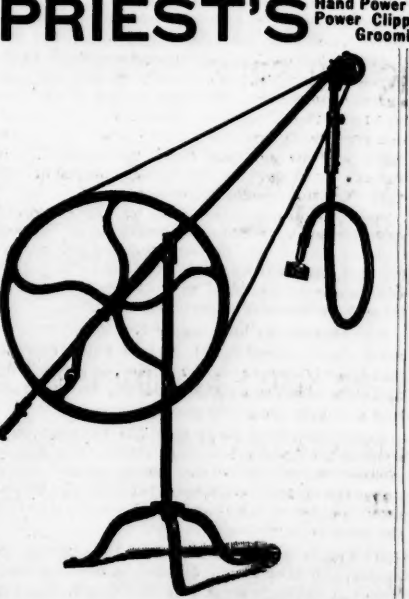
12908

2.18 1-2.

-4; Princess of Cedars, trial 2.28 1-2; Cold
-2; Elspeth, p, trial 2.12 1-2.

ual return.

Dratton, Worcester Co., Mass.



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\$50 with u
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